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PRINCIPLES
OF
ORNAMENT



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Patera in silver from the Hildesheim treasure.



THE
PRINCIPLES OF ORNAMENT

BY

JAMES WARD

HEAD-MASTER OF THE MACCLESFIELD SCHOOL OF ART

EDITED BY

GEORGE AITCHISON, A.R.A.

PROFESSOR OF ARCHITECTURE AT THE ROYAL ACADEMY OF ARTS

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EDITOR'S PREFACE

AS Examiner on the Principles of Ornament at the Science and Art Department, I found there was no good English text-book on the subject, so the necessary information could only be picked up by extensive reading and independent observation, and these are not to be expected from young students. Certain parts of the subject have been admirably treated by Moody in his *Lectures and Lessons on Art*,—in fact I know of no book where the subjects treated show such keen observation and profound knowledge, but they are embedded in lectures on other subjects, and the book has no index. Having written the original Syllabus on the Principles of Ornament, I was disposed to write a text-book, had not other avocations prevented me. Last year Mr. Ward's book on *The Elementary Principles of Ornament* was sent me, and though it was a useful book and had a glossary, it contained some doubtful passages, and being printed from a course of lectures it was a little too discursive. In writing the new Syllabus this year I could not recommend it for a text-book as it stood, but as I thought it would be unfair to Mr. Ward for me to write a text-book after

the trouble he had taken, I consented to edit a new edition. I may here say that I have left Mr. Ward's musical comparisons as I found them, and have not revised his views on Ogham, and Runic, nor those on the symbolic ornament of the Egyptians, Assyrians, Siamese, Burmese, Japanese, Hebrews, Buddhists, and Brahmins.

GEORGE AITCHISON.

EDITOR'S PREFACE

TO THE SECOND EDITION

I HAVE carefully revised the book without altering its substance. I have also added an Appendix containing a few remarks on the Orders of Architecture, with illustrations of some of the best classical examples; believing that this would be useful, not only to carvers and modellers who have to execute enrichments on Architecture, but to all students.

The ornamented parts of the Greek and Roman Orders, figure sculpture apart, show how two cognate nations, each with transcendent abilities but of an entirely different range, abstracted the beauties of plants, and conferred them on stone and marble to emphasize and adorn the rigid forms of Architecture; how the Greeks seized on the exquisite beauties of flowers, and adapted them, so as to retain the greatest purity of form, and used them in the most sparing way; while the Romans, or Greeks working under Roman dictation, used them lavishly to procure magnificence; and eventually were so prodigal with their ornament as to defeat the end in view, as little of the architecture was left plain; to act as a foil to the enrichment; while from the

quantity employed no time could be spared to perfect the ornament.

The power of abstracting and applying the beauties of floral form seems now to be entirely lost. The great art of the present day seems to consist in copying nature as exactly as it can be copied in hard materials to make a colourable imitation; but in such a way that its highest beauties are lost.

Mr. Ward has added several illustrations which his experience shows him will be useful to students, and he has added an Appendix on the construction of some geometrical figures, and the methods of drawing conic sections and spirals.

GEORGE AITCHISON.

AUTHOR'S PREFACE

IN the preface to the first edition of this book, I stated that the contents consisted of a series of class lectures given to art students. These lectures were not originally intended for publication. I was, however, strongly advised to publish them, and did so without any attempt at revision, under the title of *Elementary Principles of Ornament*. Although there are many excellent text-books on ornament published at the present time, there are none that exclusively treat of the theory, or what is known as the "principles of ornament"; this belief is shared with me by many of the principal art masters in the country, and by many gentlemen whose names stand high in the list of decorative artists, judging from the numerous letters and opinions I received after the publication of the first edition.

I was gratified to find that the book received a favourable recognition from the authorities of the Science and Art Department.

The present edition has been edited and revised by Professor Aitchison, A.R.A., the Government Examiner in the subject and Professor of Architecture at the Royal Academy. To that gentleman I here

desire to record my grateful thanks for his invaluable services in connection with the book, and, I am sure I shall be right if I add, the thanks of all students in ornamental art. Professor Aitchison has also written the new introductory chapter.

I wish here also to express my best thanks to John Vinycomb, Esq., F.R.S.A.I., for his valuable suggestions to me in the chapter on symbolic ornament.

The illustrations must only be accepted as black-board diagrams, they are merely intended as aids in explanation of the text ; more illustrations have been added to this edition, a few that appeared in the former edition have been left out.

J. WARD.

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INTRODUCTORY CHAPTER

IT may not be amiss to point out the advantages of studying ornamental art even to those who do not mean to be artists. The course to be adopted, after acquiring the necessary geometry, is to draw or model plants and to learn their anatomy. This will make the student accurately acquainted with the forms of plants and of their parts, and as he progresses he will find out beauties which have escaped him in a cursory view; the further he proceeds, the more his admiration will be excited by those subtle beauties he finds so hard to render and so easy to miss. The student will then notice, how many illustrations of plants are near enough to the originals to be unmistakable, but that the grace of the plants has evaporated. As soon as he is sufficiently advanced to study with advantage the best examples of ornamental art, he will find out the difficulties the great ornamentalists have overcome in applying the beauties of nature to works of art; and will then take a deeper interest in these masterpieces, and receive a corresponding delight. He will learn from these studies to reverence the artists and to admire the nation that produced them; for "art is the mirror of a nation's civilization."

I have spoken only of floral ornament, though the highest ornament is the human figure, and after that animal forms. The severity, however, of the requisite studies to become a figure draughtsman, which demand a knowledge of the skeleton and of the muscles, unfortunately deters amateurs, and not unfrequently ornamentalists, from learning to draw the figure, so that their works fall short of the excellence of the Greeks and Italians, who were above all things figure draughtsmen. Amateurs too will greatly aid the art, for as a rule excellence is only attained when there are many educated lovers of it, who can appreciate a beautiful creation, and reward the artist by their judicious admiration.

For twenty years I have pointed out that Nature offers her beauties gratuitously to mankind for its solace and delight ; perhaps, however, the following words of Emile de Laveleye, in his book on *Luxury*, will have more weight :—

“ Might not the man of the people, on whom the curse of matter weighs with so heavy a load, find the best kind of alleviation for his hard condition, if his eyes were open to what Leonardo da Vinci calls *la bellezza del mondo*—‘ the beautiful things of the earth ’ ? . . . Pindar says, ‘ In the day when the Rhodians shall erect an altar to Minerva, a rain of gold will fall upon the isle.’ The golden rain which falls on any people when literature and the fine arts are encouraged . . . is a shower of pure and disinterested delights.”

I am tempted to say something on the prospects of ornamental art. Nothing in this world can be had without paying for it, but though we must all live,

those who have devoted their lives to the creation of the beautiful, look more to the delight they give and the admiration they excite, than to mere pecuniary rewards. No art will ever flourish unless there are educated and enthusiastic admirers of its masterpieces. The artist will never devote his talents to an art, and undergo the ceaseless toil requisite to create beauty, unless he be rewarded by the praise of real judges. I fear we cannot as yet make the Greek boast "that we love the beautiful"; but until we do love it, we can hardly expect to rival those who did.

The whole ornamental art of the world is now before us, and it is not to be believed that artists would not elaborate something new and beautiful from all the knowledge they have gained, if there were a passionate desire for it among the people. This can never be so long as the public is content with paraphrases of deceased art, or merely asks for a jumble of discordant scraps. Novelty we must needs have, for this generation does not inherit the precise tastes of former days, not even those of its immediate predecessor, and it is this generation that wants to be charmed: it is true that it gets novelty, but it should want beautiful novelty, and not that which is commonplace or ugly. Novelty in art is not an absolute difference from what has gone before, for that is sure to be bad, but only that difference and that improvement which one instructed generation can give to the past excellence it builds on. It is therefore necessary for the student who is born an artist, and hopes to create new loveliness, to be steeped in the beauties of nature and of art. To attain this a profound study

of nature and the masterpieces of former art are wanted, for, as Sir Joshua Reynolds said, "Invention is one of the greatest marks of genius, . . . and it is by being conversant with the inventions of others that we learn to invent"; while to express our knowledge and invention admirable draughtsmanship is requisite.

We have a novel phase of ornament, which consists in twisting or arranging certain plants into the shape required, to make them fit their places. Much of this work is flabby or wire-drawn, and often omits the highest beauty of the plants it uses, but even when the beauty of the plant is not left out, the ornament is infinitely below the highest flights of former art, in which the artist had absorbed the graces of floral growth and had properly applied them. The highest ornament, by its abstraction, is closely allied to architectural art, while all its higher achievements are in conjunction with architecture; consequently there should be a harmony between the decoration and the framework. Natural foliage arranged on a geometrical basis makes a poor contrast to noble architecture.

All ornamental arts, that are not realistic imitations, must be founded on precedent art. We have only one complete system of decorative art that took an entirely new direction besides Gothic, and that harmonizes with its architecture—the Saracenic—and that art is not congenial to our taste, feelings, or desires. Gothic ornamental art is mostly too barbaric or too realistic to suit us, except when it is borrowed from Roman, Byzantine, or Saracenic sources; in fact, we have nothing but Roman, Byzantine, and

Renaissance art to fall back on for ornament ; of Greek ornamental art we have some carved stone-work, moulded metal-work, painting on vases, incised work, and the traces of painting. Little of secular Byzantine art remains, though it is not probable that it materially differed from the ecclesiastical art of its period ; it was Roman art modified by the new religion and by Greek and Oriental taste, in which saints and martyrs, with their attributes or symbols, took the place of the antique gods and goddesses ; while the Renaissance was an attempted revival of Roman.

We cannot expect to equal at once the master-pieces of Greek, Roman, or Renaissance art ; we have neither the centuries of experience nor the cultivated public. Every artist, however, can, by the means before mentioned, be sure of having conquered the preliminaries of his art, and he can be sincere ; he can give us those beauties from nature that have captivated him, and have been transfused into ornament by the alembic of his mind ; such ornament will be sure to find some congenial spirits to admire it : and I think I may say that a public sufficiently cultivated to appreciate real art is gradually being formed. The highest art is undoubtedly that which is the simplest and most perfect, which gives the experience and skill of a lifetime by a few lines or touches ; and this art is more calculated to captivate the best taste of the day than the complex or the intricate. However, there will even now be ample recognition of the creations of any skilled artist who is sincere, let his genius take him where it will. There is, too, this consolation for every true artist

whose works remain : that if there are few judges of his work now, there may be more hereafter—judges who when they look at his work will say, this is the work of a true artist ; and he may confer delight on unborn thousands, and direct attention, in after ages, to those beauties of nature that have been overlooked.

I will now revert to the book, and confine myself to such remarks as I hope may be useful to those who study it. The student, when he has learnt and comprehended the laws, should observe growing plants, and notice that every plant illustrates some, and mostly many, of the laws ; and when he has clearly distinguished them, he should examine the best ornament of antiquity and the Renaissance, and satisfy himself that the laws, involved in the particular example he is studying, have been followed. When he has done this, he should note any divergence from the laws and endeavour to understand the reason for it. To ensure the effect they intend, great artists sometimes ignore the ordinary laws.

It is well that he should consider that the main object of every plant is to live and propagate itself : to live it wants air, moisture, and nourishment, and mostly sunshine, and it must strive to get these necessities amidst a crowd of competitors. In this struggle the plant is often dwarfed or distorted, and still more frequently some of its parts are deformed ; its flowers must attract insects by their colour or scent, and must allure the insects by the honey they distil to fertilize them ; so that beauty, except in the colour of the flowers, is for the plant a secondary consideration.

In ornament, on the contrary, beauty is the only consideration, except perhaps in mnemonic and symbolic ornament; and these must have beauty, or they cease to be ornament.

Ornament has also to be portrayed on some material, or carved in it; it should conform to the shape of the object, be governed by the quality of the material, and by the use to which the object is to be put—*e.g.* a leaf may be carved in certain woods, almost of the thinness of the real leaf, but then it must be preserved in a glass case. This thinness is not to be got if the leaf be carved in stone; the artist must therefore see what beauties he can abstract from the plant he has chosen or from floral growth generally, so that it can be carved. He should in all cases know that his design can be expressed in the material to be used, that it will ornament the object, will not be easily destroyed, and will not interfere with the use of the object. If he succeeds in doing this, his skill, taste, and judgment will be admired. This necessary abstraction we unfortunately call *convention*, and when it makes good ornament, and shows the characteristic beauty and vigour of plant form, it is of the highest sort; this is found in the best Greek, Roman, and Renaissance ornament, while when a coarse and clumsy imitation of nature is made, with all the beauty left out, it is the lowest sort of convention.

Any cheap speculative houses that have carving upon them, will afford ample illustrations of contemporary convention in its worst form.

Gothic ornament was quite new; for no sooner did the architects, carvers, masons, carpenters, and others

find that they had surpassed the old world in constructive skill, than they looked down on all the old world arts, and would not be beholden to them. They were determined to begin afresh; they had human beings, animals, trees, plants, and flowers, as well as the Romans and Byzantines; why should they not make as good statues and ornament? There is much to be said in favour of this contention, for every one must desire to see his house, his town-hall, and his church ornamented with the flowers and plants that he knows and loves, instead of with the conventionalized plants of other countries that he does not know, or that he has gazed on to satiety. But it is one thing to have a longing, and another to be able to bring plants, leaves, and flowers into the domain of high art. The early Gothic sculptors did give a certain crispness, and in some cases even a monumental air to their carved flora, and sometimes they got that mysterious look of infinite complexity that is found in nature, and they had invention to a marvellous degree. From the sculptors working on the spot, and being able to see each figure and piece of ornament in its place, they never missed their effect. All their ornament answered its main end, of giving a broken mass of light and shade to contrast with plain surfaces, mouldings, or shafts, while much of it was vigorous; but some of the early Gothic foliage has no grace, is often destitute of floral character, and might be mistaken for hanks of string on pieces of firewood, or worm-eaten wigs. The first touch of the Renaissance brought a sweetness of proportion to architecture and a grace to floral ornament that is most striking.

Good traditional ornament has these inestimable advantages, that it has been treated for ages by skilful men, so that its faults have been corrected, new graces have been added to it, and it has been fitted to properly fill the requisite shapes. From the first, the artist must have noticed some special beauties and fitness in the plant he chose, and the ornament must have had some striking qualities to make it popular ; for why else should it have been preferred and persisted in, when so many other plants had great beauty? There is, however, some ornament that, after it has once been perfected, seems incapable of further improvement. The egg and tongue may be cited as an instance. It has never been improved since the perfecting of Greek architecture, nor has any good substitute for it been found. A coarse caricature of it is still the most popular ornament of the ovolo. The Romans converted it into a floral form at the Temple of Jupiter Tonans, with marked want of success.

The Greek honeysuckle and the acanthus are the most striking examples of good traditional ornament. To take the acanthus first, it was started by the Greeks, continued by the Romans, and used by the Byzantines with a different character, then adopted by the Renaissance artists, and has been treated in an entirely novel way by Alfred Stevens in our own day. Stevens has given a peculiarly plastic character to its leafage in the Wellington monument. That form of it which is used in the Corinthian capital has had such an infinity of pains bestowed on it, that improvement on the old lines is scarcely to be expected, though new floral capitals may be invented.

Every portion of the leaf, down to its rafflings, has been perfected to the end the Romans destined it to fulfil, though, as in all human inventions, something was sacrificed to attain it. The Greek capital was rather deficient in outline, but it was possessed of the most exquisite floral grace, and this was sacrificed by the Romans to attain distinctness, strength, and dignity; these qualities being particularly necessary when it was used in colossal monuments. Even when it was on a smaller scale, we can see the advantages of the change. In some Byzantine buildings, old Greek and Roman Corinthian columns have been used together. As an isolated ornament the Greek capital is greatly to be preferred, but when the two are seen in conjunction as parts of the building, the Roman capital is clear, distinct, and dignified, while the Greek one is a confused mass.

In their colossal capitals, the Romans mostly substituted the olive-leaf for the natural raffle, and used but four or five in each leaflet; though the oak-leaf, the parsley, and the endive were occasionally used. Each raffle of the olive-leaved variety is hollowed by a curve without ribs, the only lines being those made by the edges of the hollows, and each leaflet is hollowed out like a cockle-shell as well. In the best examples, the upper edges of each leaflet are mostly clear of the one above or overlap it; in the first case they are thrown up by the shadow behind, in the latter the edges of the raffles are bright against the half light of the leaflets above, and are also thrown up by the shade in their points. The top of the complete leaf curls over, and thus

throws its shadow on the part below, so there is the contrast between masses of light, graduated shade, and graduated shadow. The back of the leaf was used to get a wide stem, and this stem tapers upwards, while the pipes, that come from the eyes between the leaflets, taper downwards, are nearly parallel with the stem, and are deeply undercut, thus making the whole leaf distinct and vigorous (Fig. 110). If examples are compared, the superiority of the parallel pipes over those that run into the stem is at once seen. The lower leaves are cut through horizontally in the middle, and come straight down on to the necking, which gives much more vigour to the capital, than when the bell turns inwards above the necking.

The student will do well to carefully draw a good example, then model it, and then carve it, for it has been the type from which most good floral capitals have been derived. The acanthus and other floral ornament used by the Italian Renaissance artists deserve quite as much attention as the Roman; for though their ornament was not on the same colossal scale, it was done by excellent figure sculptors who had studied ornament, and were of finer artistic fibre than the Romans, besides having the best Roman examples for their models. The Italian artists were, too, nearly as fond of the human figure as the Greeks, and introduced it wherever they could do so appropriately.

There is perhaps but one other ornament that is worthy of the profoundest study, the radiating ornament of the Greeks, known as the Greek honeysuckle. This ornament is full of subtle devices, in

the elegant graduation of its forms, in the proportioning of the masses, in its even distribution, and in the making of the different curves enhance the value of one another. There is often, too, a suggestion of horizontality or verticality introduced, that gives the highest value to the composition ; all showing the intimate acquaintance with nature that the Greek artists possessed. Many of the Greek running patterns are both original and effective, and in some of them tangential junction is distinctly avoided, to attract attention to the ornament. The Greeks, too, were pre-eminent in knowing the use of restraint and the value of plainness. When the sculptor had carved his ornament on an architectural monument he seemed to say, "Better this if you can !"

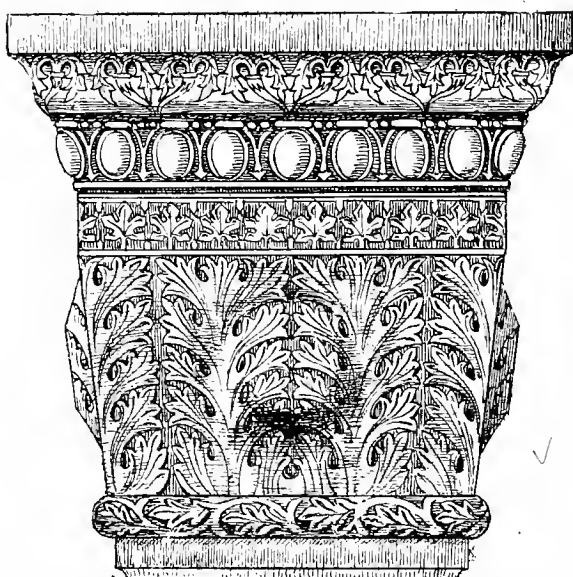
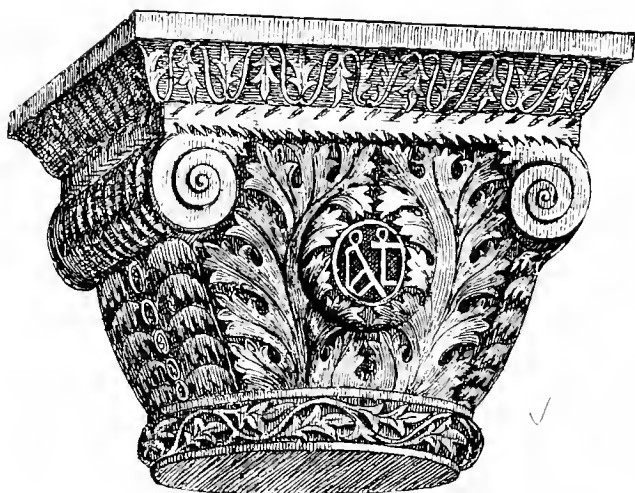
The Byzantines understood the value of gradation, and when they wholly ornamented a profile, they made some parts in bold, some in low relief, and engraved or sunk other parts. The Saracens learned this art from them, and so improved on it, that the general effect of their best work resembles Greek art ; at the proper distance the subordinate ornament looks like a mere difference of texture.

Saracenic ornament affords the only instances of complete floral decoration without the figures of man or animals ; and although it is inclined to be monotonous, and geometrical forms are too predominant, it is, when coloured and gilt, saved from monotony by the magical change of the patterns on the beholder shifting his position. This effect is obtained by trifling differences of level in the planes of the ornament and by gilding. Its floral forms, however, are usually coarse and poor, and have no refined graces.

There are a few points not touched on in the book which it may be well to mention. One is a device that was, I think, only used by the Byzantines, *i. e.* bossing out ornament to catch the light. Constantine the Great, when he had the Church of the Holy Sepulchre at Jerusalem built, had the capitals of the sanctuary columns made of silver, and doubtless the silversmiths in working them hammered out some bosses to catch the light. This device was seized on by the sculptors of Sta. Sophia at Constantinople, and used in the marble capitals of its columns and pilasters (Figs. A and B).

I may also draw attention to another Byzantine device, which charmed Mr. Ruskin at St. Mark's—the leaves of capitals caught by the wind and blown aside. Capitals with a similar device existed in Sta. Sophia at Salonica, some of which were partly calcined by the late fire. The propriety of using such an incident in the conventional stone ornaments of a supporting member may be doubted, still we must admire the observation and genius of the sculptor; and there are many opportunities of using such an incident when the ornament is not on a supporting member. I point it out to show what fresh resources for the ornamentalist are to be found in nature, when he has the industry to observe and the talent to create.

There are cases where architectural features have to be reduced, and at the same time to be emphasized too. No better example of this is to be found than in the Caryatid temple attached to the Erechtheum. Its entablature was below the main one, and so had to be smaller, and yet was wanted to be important



FIGS. A and B.—Byzantine Capitals from Sta. Sophia at Constantinople, showing the bossing out of the ornament.

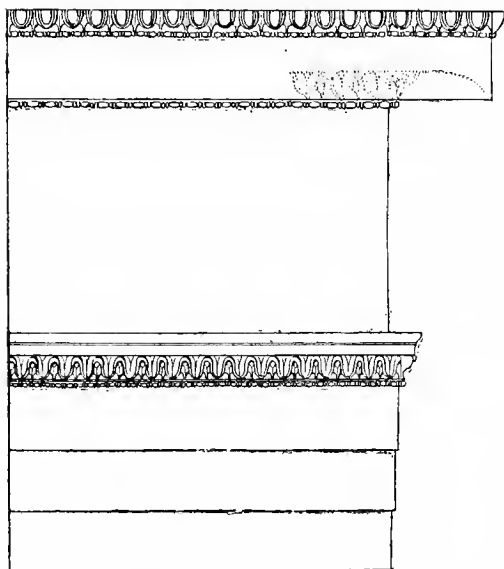


FIG. C.—Entablature of the Erechtheum.

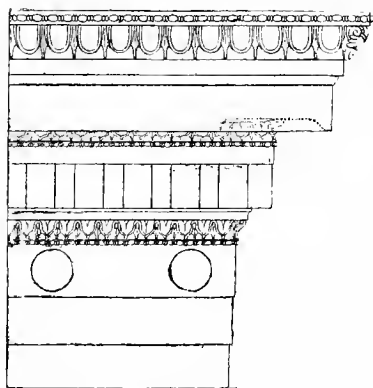


FIG. D.—Entablature of the Caryatid portico of the Erechtheum.

and weighty enough for the figures. All the frieze but the capping was consequently left out, the top fascia of the architrave was enriched with circular discs, and between the cappings of the architrave and frieze a deep dentil band was introduced. Mainly by these means the due effect was gained (Figs. C and D).

Ornament has sometimes to be repeated in a composition on a smaller scale, and this should not be done by merely reducing the scale so as to have a diminutive reproduction, but by keeping the general form of the ornament with fewer details. Several examples may be found in M. Mayeux's book.¹ Instances of the same motive being repeated in the same height and in a narrower width are sometimes found. An example may be seen beneath the double and single windows of an hotel in the Rue Dalbard, Toulouse² (Fig. E).

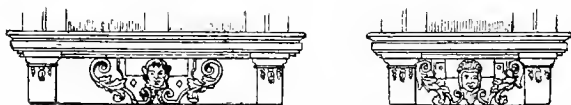


FIG. E.—Reduction of similar ornament in different spaces.

Much might be said on the subject of materials, but I will only make a few remarks. In making a design, due consideration should be given to the material employed, so that the natural ornamentation of one material may not be put on another; pottery is turned on the wheel, and is adapted for painting, while hollow metal vessels are embossed, but it is

¹ M. Henri Mayeux, *La Composition Décorative*, 8vo, Paris, s.a.

² See M. César Daly's *Motifs Historique*, fol., Paris, 1881.

common enough to see pottery embossed, which can, it is true, be accomplished by casting or by inlaying, yet this sort of ornamentation always looks inappropriate. Stone is usually of large and wood of small scantling, yet in the front of a stone building with arched openings the wooden door-head is often made a continuation of the stone impost, though the mouldings of the wood-work should be finer and the ornament different.

Although the young student should confine his attention to the best styles, the advanced one should have some acquaintance with all traditional ornament, even the styles of Louis XIV. and XV., a grafting of Chinese and Japanese ornament on the current classic, for they are the only modern styles, except the early Renaissance, that have complete unity. The same style runs through the whole building, down to the door furniture and the damask of the chairs; the handling, too, is often admirable, and the examples are full of hints to the advanced student, who is unlikely to be infected with the rococo style.

I have dwelt much on carving for several reasons; it is the most lasting of ornamental work, and as a rule the most important; it is susceptible of the greatest perfection when executed in marble, and all architectural ornament must eventually fall into the hands of the sculptor, since he has devoted his life to its study. I may add that the French architects look upon it as the weak point in English architecture.

To the young student I may say that he can never become an artist until he has mastered the fundamental principles of his art; and that nothing can deserve the name of ornament that is not both

appropriate and beautiful, and has been evolved from nature by the mind of man. I would suggest to the young artist that the flora of the world is not confined to the lotus, the honeysuckle, and the acanthus ; that if accident caused the original choice of these plants, it was the infinite pains bestowed on their treatment that caused their persistence. There are, too, thousands of beauties still to be culled from plants and flowers that now remain outside the domain of art. Let the student remember that knowledge, skill, truth, and sincerity are the main roads to real success, and that real success is, to have produced some beauty that has captivated or will captivate mankind.

G. AITCHISON.

THE PRINCIPLES OF ORNAMENT

CHAPTER I

ORNAMENT is the proper enrichment of an object or surface with such forms, or forms and colours, as will give the thing decorated a new beauty, while strictly preserving its shape and character. It is the function of ornament to *emphasise* the forms of the object it decorates, not to *hide* them. Decoration is not necessarily ornament; for instance, the lovely sprays of plants with birds and cognate subjects, painted on Japanese pottery, may be called beautiful decoration, but cannot in our sense of the word be called ornament; for however realistic ornament may be, it must show that it has passed through the mind of man, and been acted on by it. This kind of decoration might be a literal transcript from nature, and neither emphasizes the boundaries of the decorated surface nor harmonizes with them. It possesses an exquisite beauty of its own, for the drawing and colour and the style of execution are good. With the exception of frets and diapers,

true ornament is rare in Japanese art. Fig. 1 is a Japanese decoration on an oblong surface. Such a design is pretty, but we can hardly call it ornament. Something must be done with it before we can give it that name.



FIG. 1.—Japanese decoration.

To make an ornamental design, the units of the decoration must be arranged and brought into order ; repetition and symmetry may not be required, but *even distribution, order, and balance* are indispensable.



FIG. 2.—Japanese decoration altered.

The whole too must not appear to be accidental but designed for the object, while No. 1 might have been made from a shadow cast on a window. The sketch at Fig. 2 is an attempt to illustrate our notion of ornament by using the elements in Fig. 1 evenly distributed, having at the same time a due regard to the boundary-lines of the panel.

Applied ornament is that which is specially designed and fitted for the position it occupies.

Independent ornaments are such things as shields, labels, medallions, &c., with or without enclosing frames ; pateræ, festoons, and other loose ornamental objects, which may be attached to a surface, and may be used alone, or in combination with applied ornament (Fig. 133).

Numerous examples may be given of *inappropriate* ornament. As a rule, any kind of ornament that is not suited to the surface ornamented, or is falsely constructed, may be called inappropriate. For instance, if upright panels and pilasters were decorated with ornament running in oblique lines, or with a strongly-marked series of horizontal bands ; or if a carpet pattern were designed to run in one particular direction ; or, from an architectural point of view, if columns supporting nothing were used in decoration ; if consoles or brackets were turned upside down ; or if curved mouldings were decorated with frets ; or panels were overloaded with mouldings ; if forms, organic or otherwise, were used together, but out of scale with one another ; or things were made to simulate what they are not ; or there were a great excess of enrichment ; each of these examples might be considered as inappropriate ornament.

Methods of Expression.—Ornament is expressed in three different ways: Firstly, by pure outline, as traced with a point ; secondly, where breadth is added, by flat tints as in painting with the brush, or by shading, hatching, spotting, or stippling ; thirdly, by relief, or sinking, as in modelling and sculpture.

These three divisions may be subdivided, but all the subdivisions are but varieties or combinations of the first three genera. Relief modelled or pierced ornament has no other outline than that given by light and shade; but it may also be coloured, *i. e.* in two shades—one for the ornament and one for the background, or with the forms and background “picked out” in a variety of colours. Shaded or painted ornament in the flat is an imitation of relief work, and will be noticed again.

Ornament Expressed in Outline.—All the early decorative work of mankind, both the prehistoric etchings on bone and on pottery, the line decoration on Assyrian cylinders, bronze dishes and tablets, and the incised work on the Greek, Etruscan, and Roman cistas, hand-mirrors, and vases come under this head; as well as sgraffito-work when expressed by outline, cut in plaster showing a different-coloured plaster beneath.

Ornament Expressed by Flat Tints, in monochrome or colour, with no shading and without shadow, is a common method of ornamentation. This class includes painted ornament on the flat, whether polychromatic or in “grisaille”; inlaid wood-work, called parquetry when used for floors, and marquetry when used for other purposes; inlaid marble, stone, tile and plaster work, mosaic, tessellated, sectile and Alexandrine pavements; damascened metal-work; some enamels, lac-work, and painted pottery; woven, embroidered, printed, and stencilled stuffs, including oil-cloth; enamelled glass; and some sgraffito-work. It is convenient to class under this head certain

work of slight thickness or relief, such as lace, applied work of paper, stuffs, velvet, &c., fine filigree and wire-work. Inlay under the name of "Tarsia" was greatly used by the Italians in the decoration of cathedrals and churches and in fittings and furniture; in cathedral stalls and sacristy fittings, boxwood was commonly inlaid in walnut, but ebony and ivory were largely employed for house furniture and fittings, and many different substances were sometimes employed. Tortoiseshell, gold, silver, ivory, mother-of-pearl, and different coloured woods are largely employed for the same purpose by Orientals and others. A species of inlay composed of white and stained ivory, ebony, and silver, in geometrical patterns, is much used by the cabinet-makers of India—our Tunbridge ware is supposed to be an imitation of it.

Flat Tints enriched by Outline were sometimes used in Greek vases, and are often used in inlays and damascened work; very pretty examples may be found in old Chinese lac-work, inlaid with figures and landscapes in black mother-of-pearl, the features, &c. being outlined.

Relief-work.—Ordinary modelled and carved work, either in relief or sunk, is too well known to need description; but under this heading are included pierced, open, and turned work, and such compound work as may be pierced, or turned and carved or incised as well.

Coloured Relief-work.—All Egyptian, Greek, and Mediæval bas-reliefs, and some if not all of their figure sculpture in the round, were coloured, but when the figures were of white marble, the colour was

generally confined to the flesh, eyes, and hair, and to the stripes or patterns on the dresses. In one of the white marble sarcophagi from Sidon, now in the Museum at Constantinople, while figures of half life-size are left wholly white, smaller figures are wholly coloured and gilt, like the terra-cotta ones of Tanagra, and some of the ornament is white on a purple ground. All the Italian Renaissance bas-reliefs in "gesso duro" were wholly coloured.

In Greek temples the carved ornament was coloured, including the triglyphs, and parts of the ornament were often gilt, the uncut mouldings too were mostly ornamented in colour. In some enamelled pottery in relief, the figures or ornament were left white on a coloured ground, or the drapery of the figures and the ornament were coloured, as in some of the Della Robbia ware. All Roman embossed plaster was coloured and gilt. Much relief-work in bronze and the precious metals has been coloured by means of enamel, or alloys in the metal; coloured mosaic has been used to clothe columns, and some mosaic and pietra dura is in relief, as well as lac and ivory work inlaid with fine stones, mother-of-pearl, and ivory; all Moresque and some Saracen embossed plaster-work, and probably carved stone-work, was coloured and gilt; some Burmese plaster-work in relief is gilt and inlaid with coloured glass, and certain stuffs have had raised ornament upon them, formed by stuffing with wadding the applied pieces, which sometimes were embroidered.

Shaded or Painted Ornament on the Flat in Imitation of Relief-work.—This is probably the largest class, and includes engraving, shaded ornament in

chiaroscuro, and shaded and coloured ornament with or without cast shadows; in it are included the Chinese, Persian, Mediæval, and Renaissance translucent enamels, which are laid over sunk (intaglio) work, and painters' enamels; Boule work, which consists of brass, tin, or pewter, inlaid in ebony or tortoiseshell with the metal-work engraved; wood inlay in the shape of shaded natural flowers, landscapes, architectural views, and figure subjects; shaded ornament on woven or printed stuffs, and embroidery; and shaded painting on china and glass, and in Arabesques. What we now call Arabesques were paraphrases of Roman painted decoration, of which Pompeii offers us so wide a knowledge. These decorations consisted of fantastic buildings, interspersed with figures, animals, landscapes, and foliage. The discovery of this kind of painting in the baths of Titus¹ at Rome led Raphael to adopt it and to improve on it. The culminating point in Arabesque painting was the decoration of the loggias of the Vatican by Raphael and his pupil, Giovanni Recamatore, commonly known as Giovanni da Udine. The Mohammedans, from whom the name was derived, mostly avoided the figures of men and animals,² even in their secular buildings or furniture, it being feared that the portrayal of living creatures might lead them to idolatry; so spaces were filled with intricate geometrical patterns and coarse foliage.

¹ The chambers under Titus' baths in which the paintings were found, were originally parts of Nero's golden house.

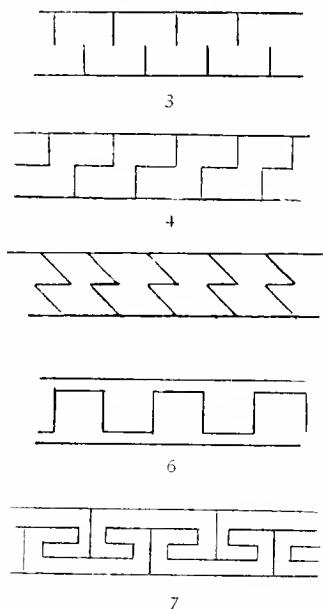
² There are, however, figures of men and animals occasionally found in their carved wood-work, tiles, damascened work, carpets, and embroidery.

CHAPTER II

THE *elementary forms* used in ornament form the next division. It is assumed that the space is given that we are required to ornament ; for example, a ceiling, a wall, a frieze, a panel, or a carpet. The boundary-lines are the enclosing lines of our space or field, which may be subdivided. This subdividing is called the *setting-out*. We have now to think of the forms and character of the ornament we propose to adopt.

It is now advisable to give illustrations of the various elementary forms used in ornament. As lines, either straight or curved, are the basis of all ornament, we begin with the straight line. It would be difficult to overrate the value of the straight line in ornament. The qualities of stability, firmness, and repose given by upright and horizontal lines are well illustrated by the mouldings round rectilinear panels, by cornices and pilasters, and by reeded and fluted ornaments. All frets are composed of straight lines. The illustrations from Fig. 3 to Fig. 23 are specimens of straight-lined ornaments. Taking the band or two horizontal parallel lines in Fig. 3, and marking off equidistant points on the upper and on the lower one, only alternating, and drawing vertical lines from these

points, we obtain the basis of a large class of frets. Figs. 4, 6, 7, and 8 show further developments of the fret. Figs. 5 and 18 show the elements of some Saracenic or Moresque frets, of which Figs. 11, 21, and 22 are developments. Figs. 6, 8, 12, 13, and 14



FIGS. 3 to 7.—Straight-lined ornaments.

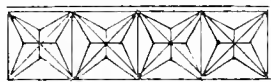
are Greek frets ; 7 and 20 are Chinese. Fig. 9 is a Gothic nail-head ornament ; 10 is of German origin ; 19 is a Japanese key pattern ; and Fig. 23 is derived from the plaiting of rushes, ribbons, straws, or from herring-bone brick-work, and is common to prehistoric and Byzantine work.

Frets are more appropriate to flat surfaces than to

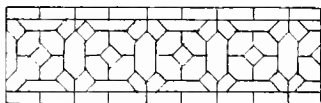
concave or convex ones ; they may, however, be used on slightly concave surfaces, such as the inside bevels of plates or dishes ; then their vertical lines will compose well, by radiating from the centre of the plate. The square within square, and double and single frets, shown at Figs. 8 and 15, were often



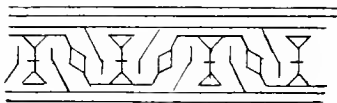
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9



10



11

FIGS. 8 TO 11.—Straight-lined ornaments.

used in conjunction by the Greeks, and earlier by the Egyptians, on the ceilings of their tombs (Fig. 16), both singly, and alternating with spirals and circular ornaments. (See Fig. 43.)

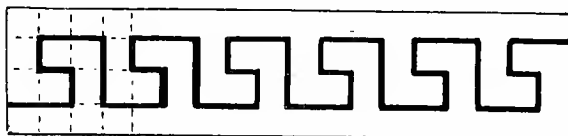
The zigzag is another straight-lined form largely used as ornament ; it was used by the Egyptians and Early Greeks as the symbol of water (Figs. 28, 165).

Lozenges and diamonds are other elements of

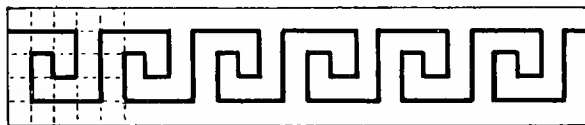
straight-lined ornament, and form the basis of many repeating patterns in woven stuffs, paper-hangings, and tiles. Triangles, squares, hexagons, octagons,



12

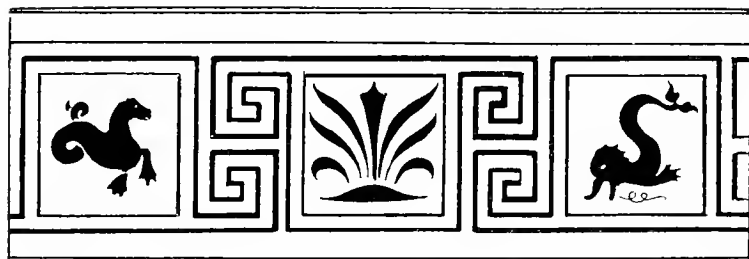


13



14

FIGS. 12 to 14.—Greek frets.



15

FIG. 15.—Fret and panel border, Greek.

and other polygons are also used largely as constructive bases in pattern-designing.

After the straight line, the curved is the other element in ornament. It is pre-eminently the type of grace, and the "line of beauty." Whether seen in the outline of the cloud, the wave, or the rounded limb of the human figure, the eye takes a delight in

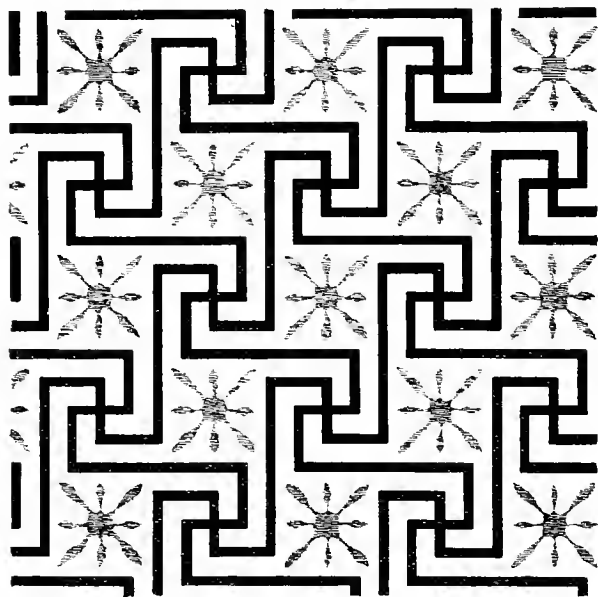
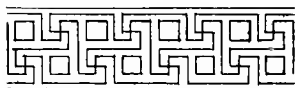


FIG. 16.—Egyptian ceiling fret.

tracing out the flowing curve. We have closed curves in such figures as the circle, ellipse, oval, figure of eight, and in the vesica piscis, or fish-shape, the latter being composed of two arcs of a circle of the same radius, touching each other at their opposite extremities. The parabola, hyperbola, &c., are open curves; such figures as the meander (Fig. 29), the

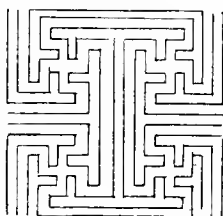
spiral (Fig. 24), the scroll (Fig. 25), and the swag or festoon (Fig. 27), are also open curves. When the festoon is formed of links and hangs like a chain from two points, it is called a catenary, and is practically identical with the lines of festoons and the loopings of drapery.



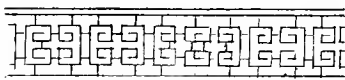
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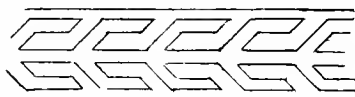


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FIGS. 17 to 20.—Straight-lined ornaments.

In the illustrations, we have at Fig. 30 circles touching each other; this is the framework of some diapers and repeating forms. Next we come to circles intersecting each other. Fig. 31 is a pattern

common alike to Saracenic, Egyptian, and Japanese diapers. Fig. 32 is a border ornament of the same pattern with a centre.



21



22



23

FIGS. 21 to 23.—Straight-lined ornaments.

An effective disc border, like that made by savage tribes from cut shells, is shown at Fig. 33, and a development of the latter is that of Fig. 34, taken



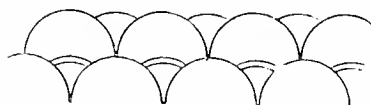
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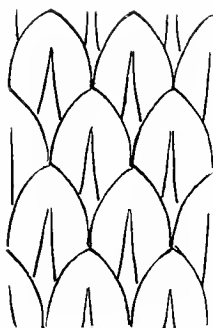
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FIGS. 24, 25.—Spiral and Scroll.

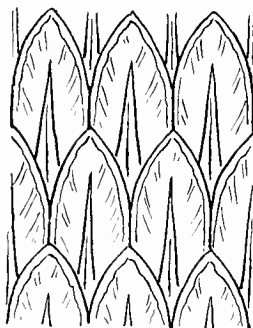
from Assyrian tesserae, small oblong pieces of stone or metal, on which the pattern was incised, and often alternating with the *guilloche* (Figs. 37, 38, 39, and 40). The *guilloche* was an important pattern in Assyrian work, in Greek moulding decoration, and in their flat painted ornament.



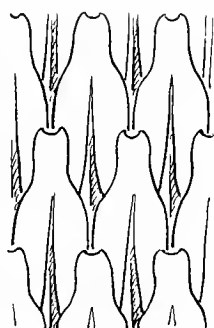
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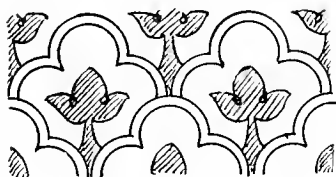
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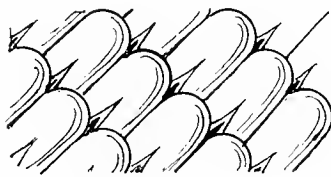
B



C



D



E

FIG. 26, A, B, C, D, E.—Scale-work (imbricated).

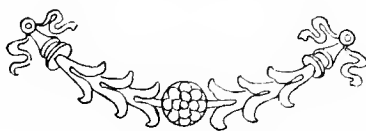


FIG. 27.—Festoon (catenary).



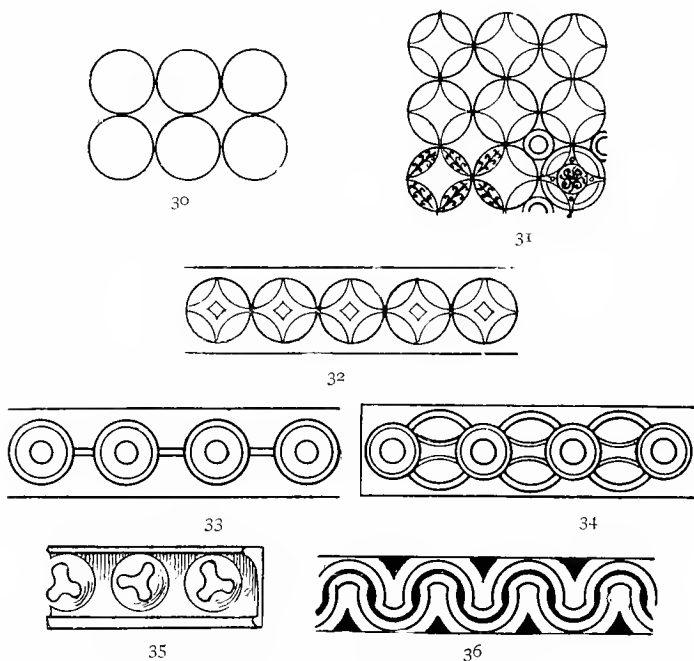
FIG. 28.—Zigzag.



FIG. 29.—Meander.

D

Figs. 35 and 36 are further examples of ornament obtained from the circle and its segments; the former being the Gothic ball-flower. Imbricated or scale ornament was much used for roofs, to ornament small columns and circular mouldings. Examples are given at Fig. 26, A, B, and C.



FIGS. 30 to 36.—Ornaments mostly derived from the circle.

We now pass from the circle to the spiral,¹ from which a great part of ornamental forms are derived.

Fig. 41 is an Egyptian wave scroll, and 42 is the familiar Greek wave. Fig. 43 is from an Egyptian

¹ Many of the frets are woven spirals.

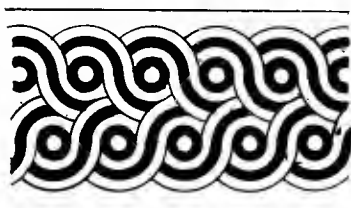
ceiling; all these contain the spiral as their chief characteristic. Fig. 44 shows two intersecting me-



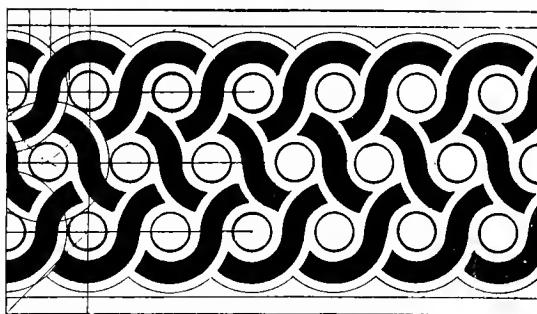
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39



40

FIGS. 37 to 40.—Ornaments mostly derived from the circle.

anders, 47 is a scroll intersected by a meander, 46 is an eccentric meander, 45' is the scroll or antispiral of the cyma recta, and 48 is the double spiral of the

cavetto decoration. Fig. 70 is the ornament on the Greek cyma reversa or ogee, called by the French *rais de cœur*; 71 is a Roman variety.

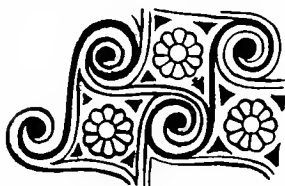
Fig. 50 shows the anatomy or centre lines of the purely æsthetic Greek pattern developed at Fig. 49.



41



42



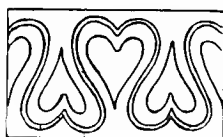
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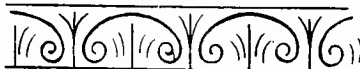
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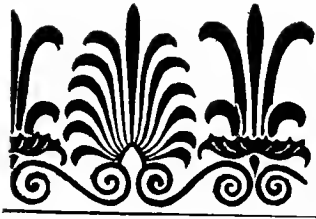
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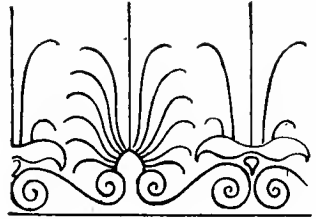
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FIGS. 41 to 48.—Ornaments chiefly based on spiral curves.

Figs. 51 and 52 are additional examples. Fig. 53 is one of the scrolls, and in Fig. 54 is shown the irregular meanders and spiral curves forming the stand for the tripod on the roof of the choragic monument of Lysikrates.



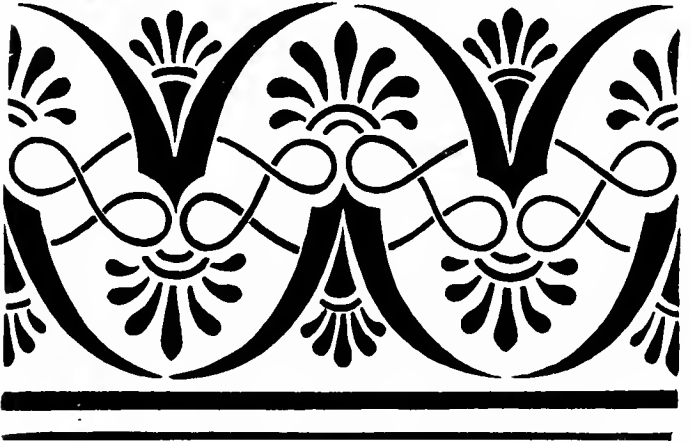
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51



52



FIG. 53.—Scroll ornament on the slope of the roof of the choragic monument of Lysikrates.

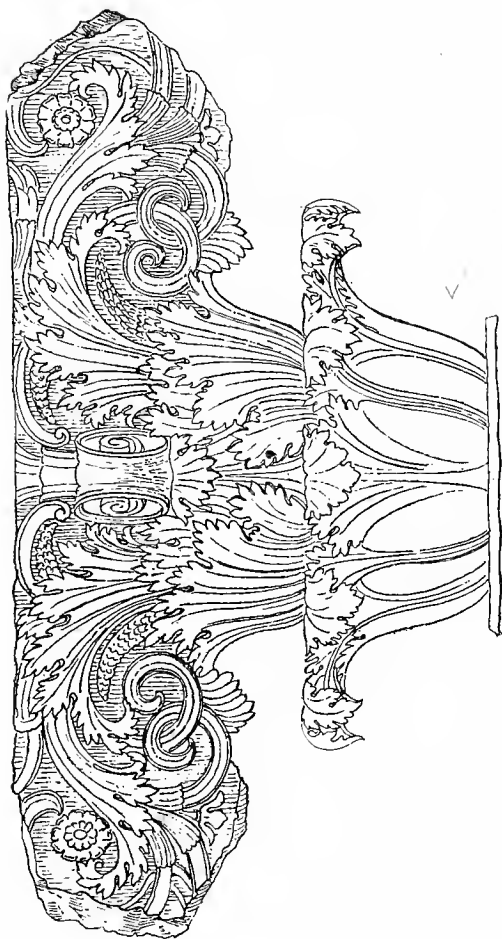


FIG. 54.—Portion of the tripod stand on top of the roof of the monument of Lysikrates.

CHAPTER III

THE laws of composition in ornament are deduced from nature, but we must look to works of art for their proper application.

The laws that may be deduced are numberless, but the principal ones may be given as follows :—

GEOMETRICAL ARRANGEMENT, PROPORTION, STABILITY, REPETITION, CONTRAST, SYMMETRY, RADIATION, TANGENTIAL JUNCTION, REPOSE, VARIETY, SUBORDINATION, BALANCE, UNITY, SERIES, GROWTH, SUPERPOSITION, FITNESS. Some of these are preliminary laws ; *e.g.* we cannot have ornament without some *geometrical arrangement*, even spots in a line must be set out at regular distances, or with a recurring element of irregularity ; and as every plant and part of it are set out on a geometrical basis, we cannot have good floral ornament without such an arrangement. The same may be said of the setting out of the more complex schemes of ornament, and besides this framework, a whole class of ornament depends on geometrical arrangement. There must be *harmonic proportion* between the parts of the ornament, as well as between the enrichment and the ground, to make ornament pleasing ; this last ele-

ment of proportion is generally called *even distribution*, and is found in all good work ; at the same time it admits of a variety of treatment : in some Indian, Chinese, and Saracenic ornament it is painfully monotonous, while in good Roman and Renaissance work, though the law is observed, there is such variety and contrast, that it never becomes tiresome. Ornament to be satisfactory must have *Stability*, and not look as if it would fall down. After these preliminaries, *Repetition* may be looked on as the first law ; as anything repeated forms elementary ornament. *Contrast* comes next, as the mere alternation of upright and horizontal lines form a contrasted ornament | ——— | ——— | ——— | *Symmetry* perhaps comes next, and is the repetition of any form on its axis ; even the rudest blot so doubled makes ornament. *Radiation* alone is the basis of much ornament, and directly we get as far as the scroll, we must have *tangential junction*, for broken-backed curves are hardly ornament. Next comes *Repose* : any decoration that seems to crawl is not pleasing but distressing. As we advance we want *Variety* and *Subordination*. An unsymmetrical ornament generally requires *Balance* ; *Unity* is necessary in any complex system. *Series* adds a new element by the repetition at stated intervals of a succession of different objects, or of similar ones of increasing or decreasing size. *Growth* gives us one of the most vigorous and delightful elements in nature, and *Superposition* may be looked on as the last addition to ornament yet made by man ; while *Fitness* may be said to include all before-mentioned and more.

The descriptions just given will serve for the

definition of some of the laws, but others require further explanation.

Proportion, by which "harmonic proportion" is meant, applies also to the architectural features of a design, and is indispensable in designing borders, composed of lines or mouldings, and in panels. The width of such border, or series of mouldings, should be a proportionate part of the narrowest width of the space or panel. There are certain distances between lines that are more pleasing than others, and as a rule, one space should preponderate. In mouldings the same thing is true, but in addition to the spaces, there are the projections and contours to be studied. The study of Greek profiles (Figs. C and D, p. 15) is most valuable, though Greek mouldings are unsuitable for external work in this climate. The methods of proportioning cornices given in Vitruvius are useful (the application of proportion to surfaces will be found at Chap. IV.).

Stability.—Instability is mostly found in creeping or twining plants, put vertically, and not attached to a central stem, or to the framework of the panel; also to bulky forms put on slight ones, that from their size seem unable to support the weight. We know from experience that trunks of trees support the enormous mass of branches and foliage above them by their solidity, and bear the strain of winds by their strength and the spread and tenacity of their roots. In the rare case in which such an arrangement is wanted in ornament, we must resort to some device, such as difference of texture between the supports and the mass above, to indicate superior supporting power.

Repetition is the first method by which things were turned into ornament, but if it be carried too far it produces monotony; this may be seen in a long succession of similar windows in factories, and the endless rows of iron railings to parks. A little more thought would put in proper places a larger or more ornate window; and in the case of railings would afford a larger and more important post or a group of them: this infusion of Variety would correct the monotonous appearance, and greatly add to the pleasure of the beholders. The ornaments on mouldings, patterns in checkers, net-work, or diapers may be repeated up to a certain point without being tiresome, but symbolic and distinguishing forms must, as a rule, be used sparingly. One human figure is mostly enough in an ornamental panel, because the figure absorbs the attention, though cupids or very young children may be repeated; the former are imaginary creatures, and the latter sportive ones, but even these should be so arranged as to compose with the foliage, which should be an open screen they are seen playing through. The difficulty of preventing even cupids from absorbing all interest, was probably the cause of the ancients so often making them half-floral.

Contrast in form or colour imparts vigour to the composition; the commonest illustration of contrast in form is the circle and the straight line, but more subtle contrasts are found in Nature's works, very flat curves being contrasted with sharp ones; and in colour, besides the contrasts of the leaves and flowers, there are often spots of contrasting colour on flowers to

heighten their brilliancy, though this is mostly effected by the pistils and stamens. The "egg and tongue," one of the most effective ornaments invented, has the smooth curved eggs contrasted with the thin lines of the shells, and the curved eggs with the straight edge of the tongue. (Fig. 67.) Renaissance and Roman ornament (see Fig. 129) give the amplest illustrations of contrast; varieties of foliage contrasting with vases, labels, shields, armour, masks, animals, and human figures. (See Figs. 121, 123, 124, 126, 127, 130, 132, and Frontispiece.)

Symmetry has been defined before as the mere doubling of a form on its axis; it is one of the most important means of producing ornament, as well as one of the laws most commonly found in nature. Nothing in nature, however, is absolutely symmetrical, though there is a suggestion of symmetry about the bulk of its works.

Radiation is the spreading out of lines from a point, like a fan, and these lines may be straight or curved, and the axis of the radiating lines may be vertical, horizontal, or oblique. It is found in the human hand, in the wing feathers of birds, in the scallop and similar bivalve shells, in the umbels of flowers, and in much other plant growth. The Greek honeysuckle is the most beautiful instance of its adaptation as ornament. (See Figs. 49, 50, 51, 52, and 115.) If the centre of the radiating lines is kept below the springing line, it adds greatly to the interest and beauty of the ornament. A succession of festoons or of drapery hanging from two points are examples of one species of curved radiation.

Tangential Junction.—Euclid's definition of a tangent is as follows :—" A straight line is said to touch a circle, when it meets the circle, and being produced does not cut it," and is obtained by drawing a line perpendicular to any radius from the point at which it touches the circumference. In ornament, tangential junction means that where two curves of opposite curvature meet they are to meet at the tangential points of each (Fig. 25), and in the case of a curve being continued by a straight line, the point of junction is the tangential point. A curve, however, should never be continued by a straight line, but by a flatter curve. The beauty imparted by following this rule is seen in the Ionic capitals of the Temple of Apollo at Bassæ, where the two volutes are joined by a curve instead of by the usual straight line (see Fig. 179 in Appendix).

Repose.—The absence of a look of motion in ornament ; this appearance of motion may be seen in some flamboyant tracery and Saracenic patterns, in some modern paper-hangings, and in patterns in woven and printed stuffs. The word repose is sometimes used to denote an absence of spottiness. In the best pilaster panels, horizontal lines are introduced partly for contrast, and partly to give repose by checking the appearance of motion in the curved plant forms. (Fig. 127.)

Variety is a difference of form or arrangement in the ornament from that which immediately precedes or follows it. In nature we see that every leaf varies from every other by subtle differences, though the foliage is roughly alike, and it is for this reason that

Nature's works never pall upon us. General similarity with slight variety is the most proper for the highest and most dignified ornament. In other cases absolute variety is permissible. Variety is the salt of ornament that takes off the insipidity of repetition.

Subordination.—The state of being inferior to another, a regular descending series. In any complex system of ornament, one part should be chosen as the most important, and all the rest should lead up to it; but certain distinct parts, such as masses or flowers, may re-echo in a fainter way the main motive. In drawing, subordination is obtained by the principal mass being larger than the rest, and by its details being larger and more pronounced; in painting, by the above and by the principal part being more vivid in colour; in modelling, by greater size and relief. The Romans and Cinque Cento artists were great masters of this art. In some panels, though the highest relief is not great, there is an infinity of gradation, the lowest relief gradually sinking into the ground. In a Renaissance bas-relief of a full face the greatest projection is about the sixteenth of an inch, and yet the face is perfectly modelled. Modern English carved ornament is too frequently deficient in this quality.

Balance.—The making unsymmetrical masses of equal weight. In the creations of nature we see balance employed in trees, shrubs, and plants (Fig. 160); in leaves, made as it were on a symmetrical basis, balance is equally employed. In simple oval leaves, for example, one side is more convex than the other, and the balance is got by the curve in the rib.

Unity, is the completeness of any system of ornament not marred by incongruous elements or forms.

Series is the repetition of a limited succession of different forms: in the egg and tongue, of two; in the bead and reel, of three; in branches of plants when the leaves regularly diminish in size, of many. (Fig. 67.) Long series may be seen in Saracenic ornament, where the same text is repeated sometimes with ornament between the texts.

Growth.—This is at once the rarest and most delightful of the hints taken from nature by great ornamentalists. In climbing plants, whose stalks are polygonal, and that twist to reach an object, or for the flowers to get the sun, the edges of the stalk are seen to form a spiral. Sometimes this vigour of growth is seen in the turn of a leaf or the clasp of a tendril round a twig. The capitals and the tripod stand of the choragic monument of Lysikrates are good examples. (Figs. 53 and 54.)

Superposition.—This is most frequently seen in Saracenic ornament, but it is also found in Renaissance ornament. The simplest form is in the case of meanders of different curvature when one is put over the other, the upper one being more vigorous in form and colour. The next case is where larger ornaments of a more striking colour are put over a smaller and less obtrusive pattern, as in the Persian windows of the Suleimanyeh at Constantinople; but the commonest case is that of inscriptions over floral ornament, examples of which are without number in Saracenic work. This, like nearly all other inven-

tions in ornament, is taken from nature. We see twining or creeping plants overgrowing trees or bushes, and parasitical plants overgrowing others, from which they get their sustenance, and have therefore roots, stems, and flowers, but no leaves. Saracenic diapers frequently have many planes superposed, and as each pattern is differently coloured and gilt, any change of position in the beholder brings out a new pattern. This may be seen in the Alhambra Court at the Crystal Palace. (Fig. 101.)

Fitness, in its most obvious sense, is arranging the ornament so that it may not interfere with the proper use of the thing ornamented. The enrichment of a sword-hilt must not hurt the hand, nor render the proper wielding of the sword difficult or impossible; and the same canon applies to the handles of flagons, jugs, or drinking vessels, &c.; in a secondary sense it is a due consideration of the qualities of the material to be ornamented, and of the appropriateness of the ornament to the purpose for which the article is intended; and thirdly, it supposes a well-ordered design, whose completeness would be marred by anything being added or removed.

The want of what is called "alternation" in design is analogous to a surface that is so elaborately decorated with a uniform repeating pattern that it is wearisome to look at.

The value of plain spaces in design is enormous. Charles Lamb, in one of his delightful letters to Coleridge, says in finishing—"I will leave you, in mercy, one small white spot *empty* below, to repose your eyes upon, fatigued as they must be with the

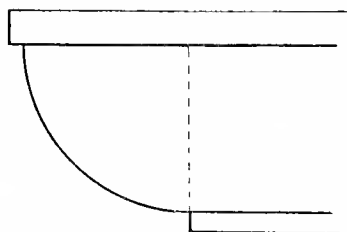
wilderness of words they have by this time painfully travelled through." To the designer this analogy will be obvious and useful.

Plain spaces as alternations in design, are the oases in the desert, and may be compared to a refreshing silence after a continuous chatter or deafening noise.

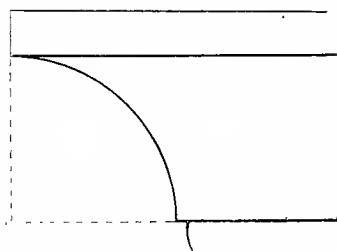
It is easier to do too much than to know exactly where to stop. Excess of ornament defeats its own end, there is no foil to set it off, and it must be guarded against. The Saracens, by the relative weight of their ornament, have to some extent obviated this objection. To know the value of plainness is to enhance the ornament used. To have this vividly brought home to you, the best Greek architecture should be compared with late Roman. In the Greek you see a very small quantity of exquisite ornament surrounded by plainness, which makes it doubly precious; in late Roman, every surface is covered without a spot to rest the eye on, so that the whole becomes dull, confused, and monotonous.

CHAPTER IV

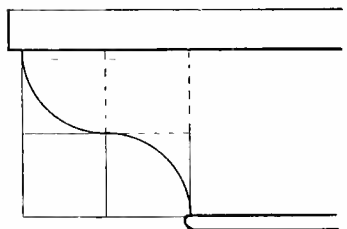
BEFORE speaking of the decoration of mouldings, a few words must be said on the mouldings themselves. The Greeks were the first people who carried the art of moulding or profiling to any perfection, and they are still supreme ; they mainly used straight-lined sections for strength, but added a few curved sections to prevent monotony. The air of Greece is pellucid and the sunshine brilliant, so for their curved sections those that approximated to conic sections were preferred as having more subtle shade, segments of circles being rarely used. (See Figs. 61—64.) The greatest efforts were made to have these mouldings as exquisite as possible, so as to get variety of shade and shadow, and mouldings of the same species were rarely or never alike. The Romans, who had much coarser artistic sensibilities than the Greeks, and were slaves to easy rules, used segments of circles for their mouldings instead of the Greek curves. (See Figs. 55—66.) They also had an atmosphere less clear, and their sunshine was not so brilliant. The Mediævals, who lived in misty climates with little sunshine, were as logical in their methods, but were not possessed of the artistic sensibilities of the Greeks, so, although their mouldings answer the



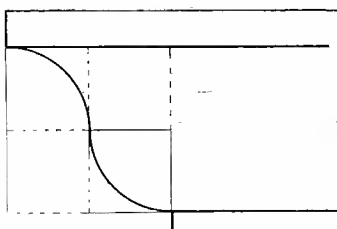
55. Ovolo.



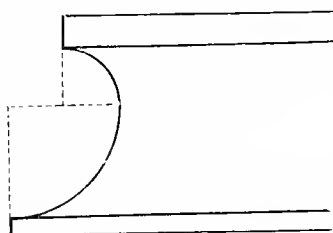
56. Cavetto.



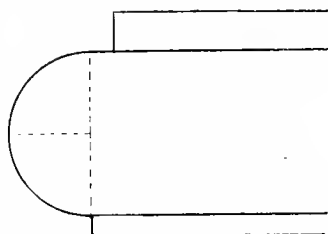
57. Ogee, or cyma reversa.



58. Cyma recta.

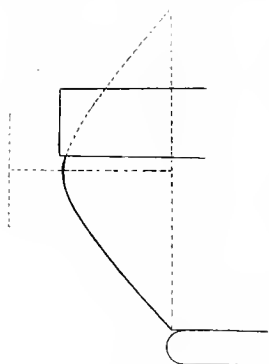


59. Scotia.

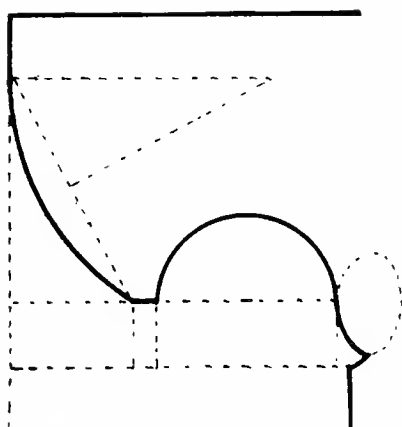


60. Torus.

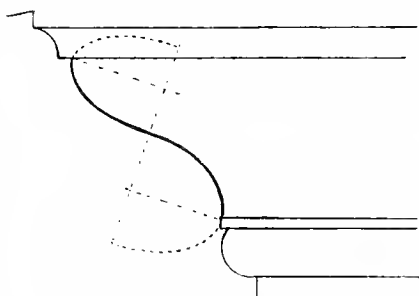
FIGS. 55 TO 60.—Profiles of Roman mouldings with their fillets.



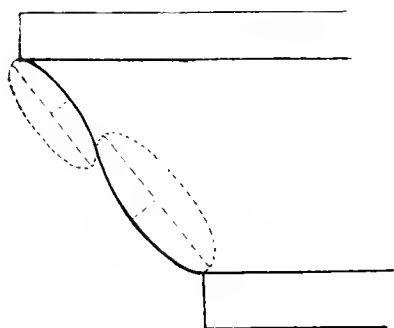
61. Ovol.



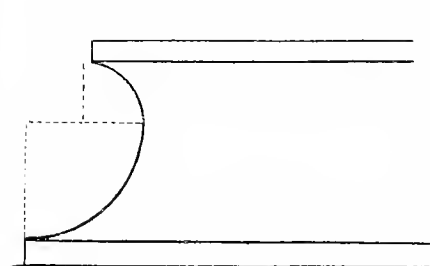
62. Hawk's beak.



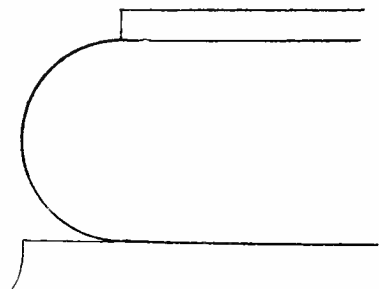
63. Ogee, or cyma reversa.



64. Cyma recta.



65. Scotia.



66. Torus.

FIGS. 61 to 66.—Profiles of Greek mouldings with their fillets.

purpose, they lack refinement. The Mediævals got their effects by deep undercutting, and by putting fillets or leaving arrises on such parts as were to tell bright;—Classic and Renaissance mouldings, however, are alone treated of here.

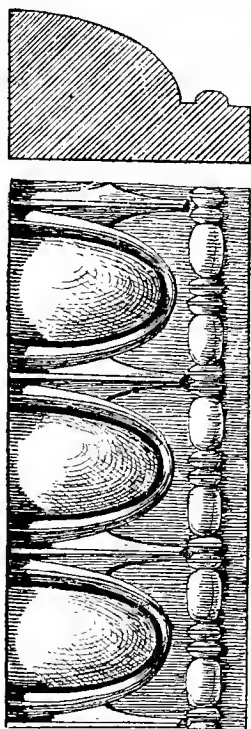


FIG. 67.—The ovolo or echinus from the Erechtheum, enriched.



FIG. 69.—The cyma recta.



FIG. 68.—The cavetto moulding.

In the best periods of ancient art it was the invariable custom to adopt a form nearly like the profile or section of the moulding, and to double it for the basis of its decoration, and nothing could produce a more

pleasing and artistic result, for then the moulding never lost its character, however elaborately it might be enriched. The diagrams from Figs. 67 to 78 will help to illustrate this: for instance, at Fig. 67 we have the Greek ovolo, ornamented with eggs, called

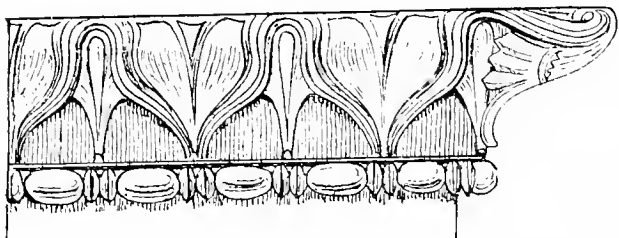


FIG. 70.—The Greek ogee with water leaf ornament.

by the Greeks "turnip stones," which resemble the section of the moulding doubled; at 70 and 73 the Greek ogee is shown with the water leaf ornament

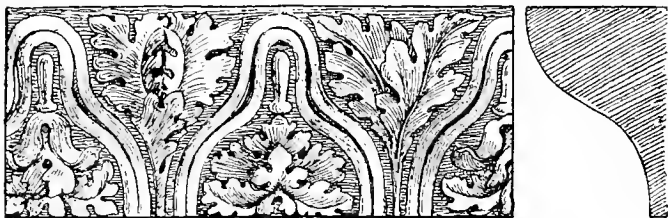


FIG. 71.—Roman variety of the ornament on the ogee.

used to enrich it, for which we have no distinctive name—it is called by the French "*Rais de Cœur*," and resembles the section of the moulding doubled; at 71 is a Roman variation of this ornament; at 68, a Roman cavetto, or hollow; at 69, a "cyma recta." Fig. 77 is a curved "astragal" or bead moulding;

and at Fig. 78 is the bead and reel ornament. (See also Figs. 72 and 73 for examples of Greek bead and reel ornament.) Figs. 74, 75, and 76 are examples of ornament used for flat bands or fascias. When these are sunk with semi-circular or elliptical channels they are called "fluted," and when raised in relief "reeded."

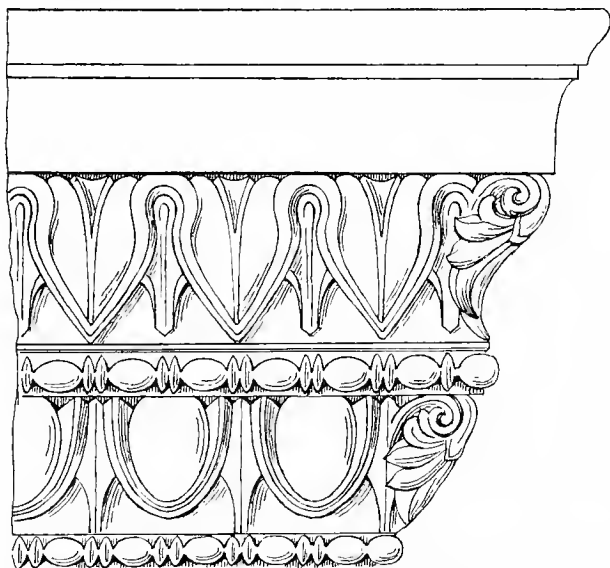


FIG. 72 —Decorated mouldings from the temple of Minerva Polias at Athens, ogee ovolo, and beads.

We may next briefly speak of the ornamental treatment of floors, walls, and ceilings.

Beginning with the floor, it must be remembered that in floor decoration the sense of flatness should be preserved ; raised and especially angular surfaces are to be avoided, and what is unpleasant to use is unpleasant to be suggested for use, though the Assyrians used relief on their floors. Whether the

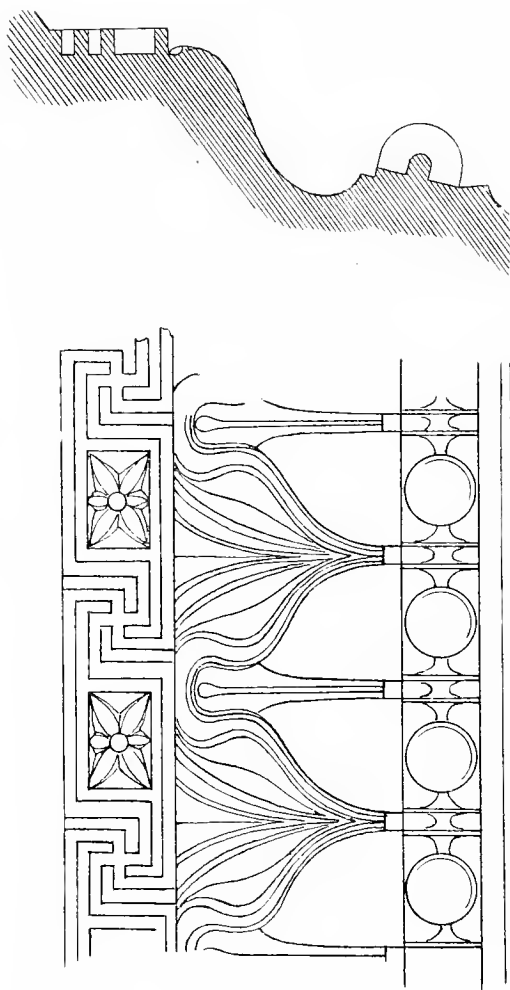
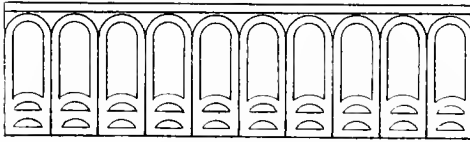
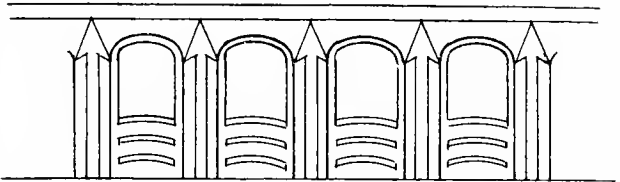
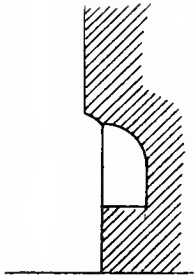


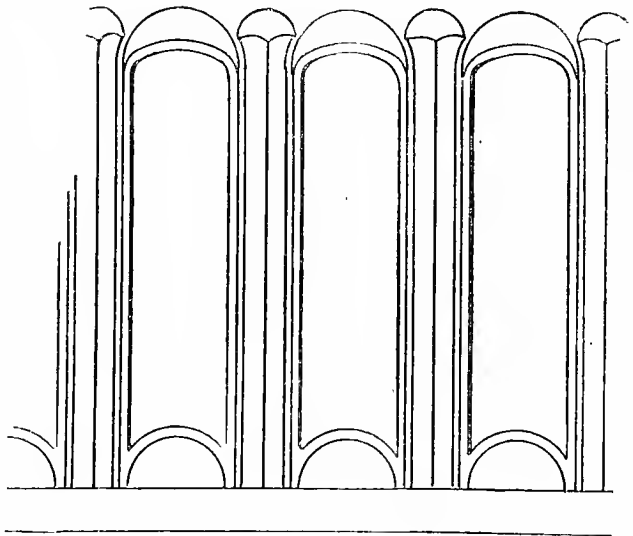
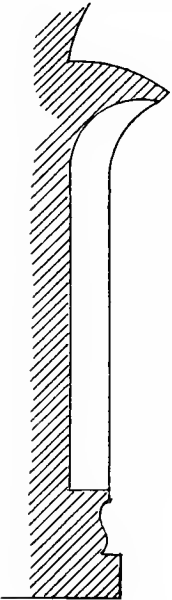
FIG. 73.—Greek cyma reversa or ogce decorated with the water leaf, a fret ornament carved on upper fillet, and a bead and reed below.



74. From Jupiter Tonans.



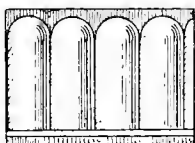
75. From the Forum of Nerva.



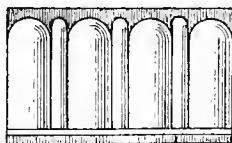
76. From the Temple of Jupiter Stator.

FIGS. 74 to 76.—Fluted ornaments.

decoration be obtained by carpets, rugs, floor-cloth, inlaid marble or metal, mosaic, tiles, or parquetry, nothing should be introduced to disturb the flatness,



76 A.



76 B.

FIGS. 76 A and 76 B.—Reeded ornaments for flat bands.

by shading the forms or by imitating mouldings, or a ridge and furrow. All realistic renderings of animals



FIG. 77.—Astragal or bead moulding.



FIG. 78.—Bead and reel.

or plants should be carefully avoided. The colour may be varied, but evenly distributed, and mostly sober; though the Romans sometimes used lapis

lazuli for their floors, or encrusted them with gems, and the Byzantines used gold or silver chased and enriched with niello. Mosaic work applied to floors was an early form of decoration, and is still of a high order in the scale of floor decorations, the highest

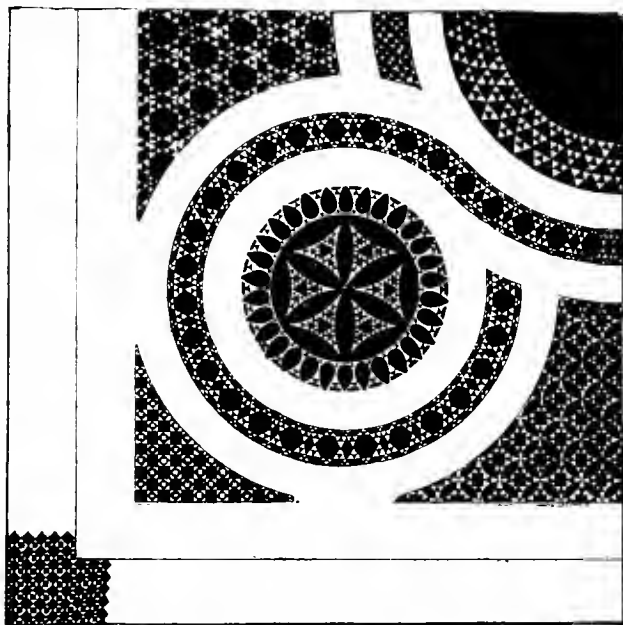


FIG. 79.—Opus Alexandrinum from a pavement in the Church of San Marco (Rome).

being marble inlaid with other marbles or with mastic, like those in the Baptistery at Florence and the Cathedral at Siena. The use of marble or tiles in this country is limited to the floors of museums, baths, halls and passages; on account of their coldness, they cannot be used with comfort in

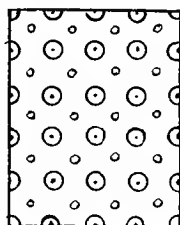
ordinary rooms. Mosaic may be treated with borders and lines like the framing of a picture, with the field (or central space) either plain, powdered with spots of decoration, or covered with a pattern. Black and white is the most dignified treatment. If other colours are used, black with pale red or cream colour, or low-toned reds, greens, greys, and yellows are to be preferred. *Opus Alexandrinum* is one of the most magnificent floor decorations yet used ; rectangular or circular slabs of porphyry are surrounded with bands composed of geometrical figures in purple, green, and black porphyry, on a white marble ground, though marble occasionally takes the place of porphyry in the smaller geometrical patterns. (See Fig. 79.)

Floor-cloths and linoleums are of modern introduction. The decoration of these coverings is best when it is of subdued colours treated flatly.

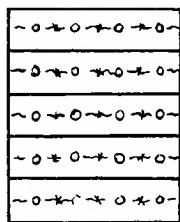
In carpets, the pattern should, as a rule, radiate from geometric points ; at least the more important spots should be on a circular, lozenge, or square basis, so that the eye should not be carried in one particular direction. If animals are used, they should have a simple outline, and should be treated flatly. Realistic flowers, birds, human figures, landscapes, and architecture are out of place on carpets. A border always improves a carpet, if properly designed to harmonize with the centre, or to enhance its value.

Walls may be decorated with metals or marbles ; with wood panelling, either plain, moulded, inlaid, carved or incised ; with plaster flatly embossed or sunk, or in which stones, shells or looking-glass, &c. is embedded ; with plain colour, with painted or stencilled patterns ; with furs or feather work ; with hangings of

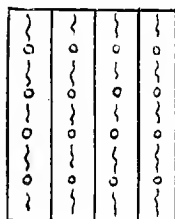
velvet, satin, silk, or calico, either plain, enriched, or embroidered ; by tapestry, matting, stamped leather or



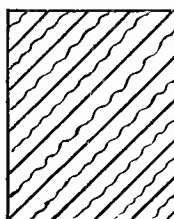
80



81



82



83

FIGS. 80 to 83.—Improper arrangements for wall-papers or room decoration.

its imitations, and by paper-hangings. If pictures are to be hung on a wall, it is obvious that a low-toned decoration, that will set them off, is alone admissible ; since the pictures themselves are the principal decoration, the walls should be treated as an unobtrusive background. The best decoration for appearance after simple colour or a painted pattern is silk or woven stuffs.¹ If paper-hangings be chosen,

¹ There is, however, a strong objection, from a sanitary point of view, to the use of absorbent hangings, especially when the surface is rough, for they not only absorb infection, but hold dust, which generally contains the germs of disease.

they should have a uniform pattern and be free from spots; for the eye should not be arrested by any particular form, nor be forcibly carried in any direction. In illustration of this, we may suppose the diagrams, Figs. 80, 81, 82, and 83, to represent decorated wall spaces. All these decorative arrangements are bad as wall-coverings; but by combining their elements, at Fig. 84 a tolerably good paper-hanging is produced that will form a background for furniture and pictures.

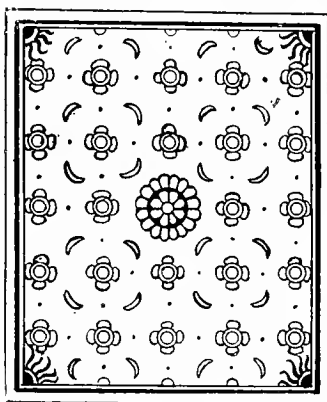


FIG. 84.—Arrangement for the lines of a wall-paper.

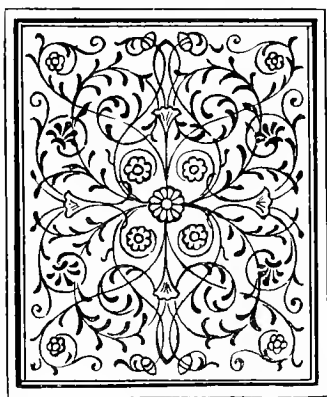
The diagram, Fig. 80, arrests the eye; 81 and 82 tend to exaggerate the height or breadth of the room; for patterns in which vertical or horizontal lines predominate will have the effect of lengthening or widening the surface of the wall; whilst the diagram 83, being composed of oblique lines, will not only give a look of weakness to the wall, but will lead the eye from one corner of the room to the other. A pattern, to be satisfactory as a background, should neither arrest the eye nor carry it in any particular direction.

The height of a real dado generally depends on the height of the chair-backs, but it may be influenced by the height of the ceiling, and partly by the use to

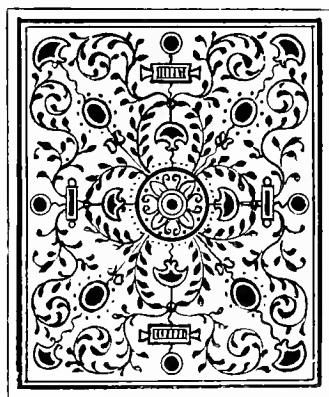
which the room is put ; high wainscoting prevents small-sized pictures from being seen. If the wainscot



85



86



87

FIGS. 85 to 87.—Fillings of ceilings showing various schemes of all-over effects.

be higher than the centre of the wall, the upper part of the wall may have a stronger decoration with a more flowing pattern than would be admissible on a

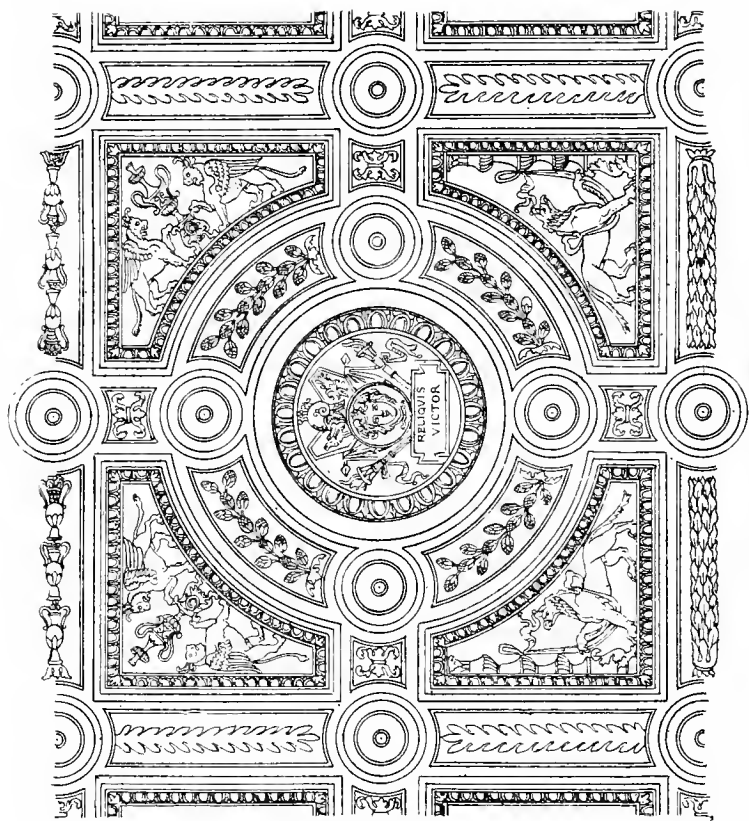


FIG. 88.—Portion of the ceiling of vestibule of Sacristy of S. Spirito (Florence) by Sansovino.

wall with lower wainscoting. If there be a frieze in the room, a still freer and more pictorial treatment may be allowed on it. The Greeks called the frieze Zoophoros, or life-bearing, because it was generally

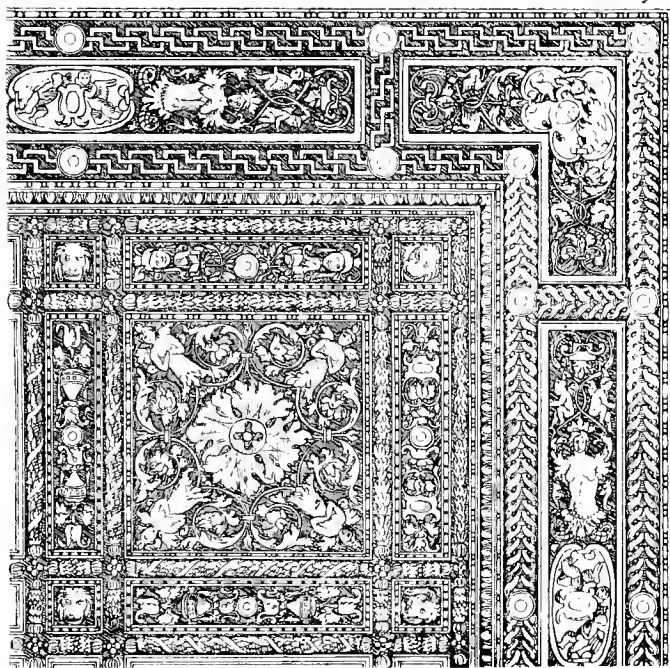


FIG. 89.—Ceiling from Serlio's architecture

adorned with figures of men or animals. Wall spaces need not be panelled in small rooms, as the window-openings, doors, and fireplaces mostly break up the space sufficiently. If the rooms, though small, are high, a dado and a frieze are improvements. On ceilings there is more room for variety and elabora-

tion. There are many ways of decorating ceilings. We may take the cornice as the frame, and regard the ceiling as the space to decorate; the simplest way is to powder it (Fig. 85), or to cover it over with a scroll-work pattern (Fig. 86). An effective treatment consists in lightly covering the field with a pattern steadied by labels, shields, or medallions (Fig. 87).

In dividing a ceiling into panels, either by painting or by relief work, the centre panel or compartment should generally be larger than any of the others (see Fig. 89, and 92 at B), though there are excellent Renaissance ceilings divided into equal panels. When the ceiling is unequally divided, the spaces should be in harmonic proportion, so that no two series of panels shall be the same width; this, however, does not apply to the widths of the stiles and rails, which should be alike. Figs. 88 and 89 show such arrangements. Care must be taken in designing the subdivisions of ceilings that the panels, interspaces, and mouldings are well contrasted. A safe guide for the designer in obtaining the requisite proportions is to be found in the Roman ceilings, although those of which drawings are preserved were mostly vaulted. For flat ceilings, good examples may be studied of the best period of Italian Renaissance (Fig. 88), and in both cases the mouldings of the panels are usually given. Where a ceiling to be decorated is divided by beams, the panelling, if admissible, should be repeated in the different compartments. Ceilings of corridors or long rooms may be harmonically divided across at discretion.

Relief work or modelled ornament on ceilings should be so regulated that the light from windows

or from artificial illumination should cause little cast shadow, only enough to define the outline ; the forms should be carefully rounded off in the more important masses to lessen the abruptness of cast shadow. A preponderance of light in the larger masses, connected and softened by lower tones, is commonly adopted.

On the carved surface itself, the play of light and shade should be quite secondary, and not compete in strength with the deeper shadows cast by the ornament on its ground. If this be not attended to, confusion and obscurity are apt to be produced.

A nice balancing of light and shade is of the greatest importance in relief ornament. It may here be remarked, that for outdoor work in a sunny climate, a lower relief in the carving and more delicacy in the mouldings is admissible, than in a misty one like ours, where strong sunlight rarely occurs ; and for this reason a bolder treatment of relief is necessary, which allows of a coarser material being used. Before leaving the subject of relief ornament, it would be as well to state, that no carved decoration should be fastened on to a ceiling or panel, but should be worked out of the material itself ; and also that where human figures are used on ceilings, they must be so arranged as to be seen from the heads at the most important point in the room ; seen from the feet the figures appear to be upside down.

CHAPTER V

IN setting out spaces for decoration the chief aim should be to get them in harmonic proportion. The Greeks were the great masters of this art, the most subtle proportions being chosen by them, but there is not space here to enter into refinements. Roughly speaking, the proportion of $1\frac{3}{4}$ to 1 is fairly agreeable; when the space required approaches a double square, it looks better if it somewhat exceeds or falls short of that figure. As a rule, a marked preponderance in the height or length should be given to every oblong used in decoration, and with those rough rules, an educated eye can mostly, after a few trials, obtain harmonious proportions. Those forms about which there is an uncertainty always look feeble and unsatisfactory, *e.g.* an oblong that approaches the square, or an ellipse that approaches a circle. In the case of the square there should be no doubt about its being a square, so it is necessary that the ornamentation chosen be calculated to emphasize the shape and not give it the appearance of an oblong, *i.e.* the ornament should be symmetrical on both the axes, and it is often useful to accentuate the corners as well; if the square be surrounded by

a border it is sometimes advisable to strengthen its corners by knees. If this be done it is necessary to have them at the four corners ; if they be applied to the two upper or the two under corners, the square will be taken for an oblong. The repetition of squares is much more endurable than a repetition of similar oblongs. A common case of the monotonous effect of similar oblong panels is to be seen in a four-panelled door with the middle rail in the centre, so the middle rail is commonly put below the centre to get variety in the panels. Even in so graceful a form as the human figure, sculptors rarely represent it in a perfectly symmetrical attitude, particularly in bas-relief, unless it be to express some marked emotion, or for the sake of the composition ; there are, however, a few figures in front view, symmetrically arranged, that form the centres of ornamental compositions : the front view of animals in bas-relief is still less admissible. The circle is by far the most beautiful and useful closed curve, but it is not always available, as in the case of a central feature in a very long ceiling or in oblong panels, and its place must be then supplied by an ellipse, which has this merit, that its proportions are infinite, the straight line and the circle being only extreme cases of the ellipse ; but when the choice is unfettered the long (major) axis should so far exceed the short (minor) as to afford a contrast ; an ellipse that differs but slightly from the circle too much resembles one that is ill-drawn. When an ellipse is placed with the long axis vertical, which is sometimes necessary in oblong panels, looking-glasses, &c., it should be tied to the vertical and horizontal framework to prevent an



FIG. 90.—Vase by Stevens showing unequal divisions of the height, and strengthening horizontal bands.

appearance of instability, and when this cannot be done it should be supported by foliage.

In horizontally dividing objects circular in plan and curved in section, such as vases, with lines or bands, several things have to be considered. The lines themselves have a strengthening effect, but the question is where they are best applied: if the curves of the object vary considerably, the points at which the variations begin are the proper places, and in this case, as in all others, variety and the predominance of one division are to be adopted; if, however, the vase



FIG. 91.—Vase showing unequal divisions of the height, and strengthening horizontal bands.

is to be decorated, the predominant space for the most important decoration must be placed where the curve is nearly uniform, or else the ornament will be distorted. The Greek painted vases, with a few exceptions, are the best examples of excellence in their divisions (Figs. 90 and 91). Due consideration must also be given to the placing of the vase; some of the Greek vases, intended to stand on the ground, have the main ornament confined to the shoulder.

In the division of objects in the round, it is a general rule that they should not be divided in the middle, but that the upper or under part should be distinctly predominant, and that the two parts should be different. There is, however, an exception to this rule, for when certain objects are wanted to be

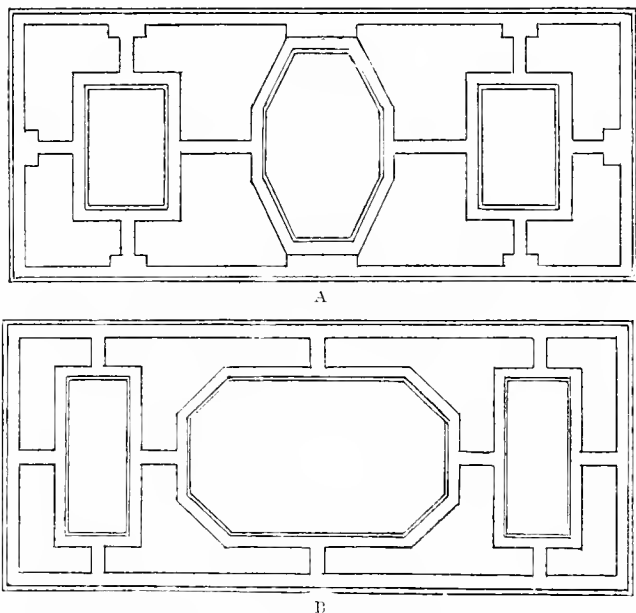


FIG. 92.—Panelling of ceilings showing at A a bad, and at B a better arrangement.

symmetrical on their horizontal axes, the upper and under forms should then be identical, *c.g.* in the case of certain vases, candlesticks, and balusters.

In the case of ornamental objects whose outline is a matter of taste, such as finger-plates, care must be taken that they neither have a weak outline wholly made up of curves, like A, nor one that is

too angular, like B; the design C seems to obviate both these defects (Fig. 94).

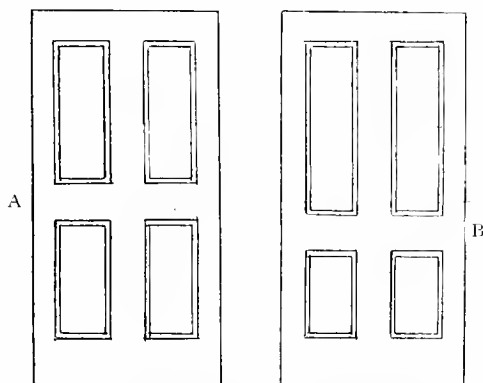


FIG. 93.—Door panels illustrating an ill-proportioned division at A, and a well-proportioned one at B.

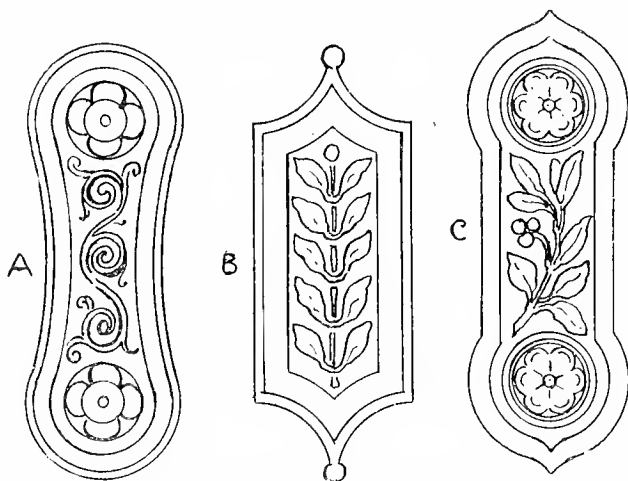


FIG. 94.—Finger-plates for a door, of different outlines.

Compositions wholly formed of parallel straight

lines, such as entablatures, and some door and window architraves, have a severity, that borders upon the monotonous, that is sometimes called dryness. The Greeks corrected this defect in their entablatures by introducing figures in the frieze, while the Romans mostly ornamented their friezes with festoons and foliage. In the door architrave at the Erechtheum circular pateræ are used on the fascia for this reason (Fig. 96); modern ornamentalists have introduced curved figures to correct the dryness. Archivolts to circular openings without imposts, and not enclosed by straight lines, lack firmness and rigidity, which may be imparted by inserting frets or flutes radiating from the centre, on the fascia of the archivolt (Fig. 95). Similar devices may be employed to correct weakness in planes of varied outline. In the shield of the savage (Fig. 97), made of black and yellow cane ornamented with cut shells, the two horizontal bands, just below the junction of the semicircles with the straight lines, strengthen the composition; there is a fair amount of contrast between the oblique lines of the ornaments, and the circular, slanting, and horizontal lines; though the circular cut shell-work of the ends is excessive and monotonous. Extreme repetition is a common fault of savage art.

When a surface requires ornament and yet to be kept flat, the painted or inlaid ornament upon it should not be shaded nor have cast shadows, or when carved it should be sunk: what beauty can be got by flat colours may be seen in the tiles from Rhodes, Cairo, and Damascus. On large surfaces the best forms of applying ornaments is within lines of checkers, network (Figs. 98 and 99), or

diapers, and except in the case of very large surfaces, where striking variety may be introduced at set intervals, the ornament should be uniform in general

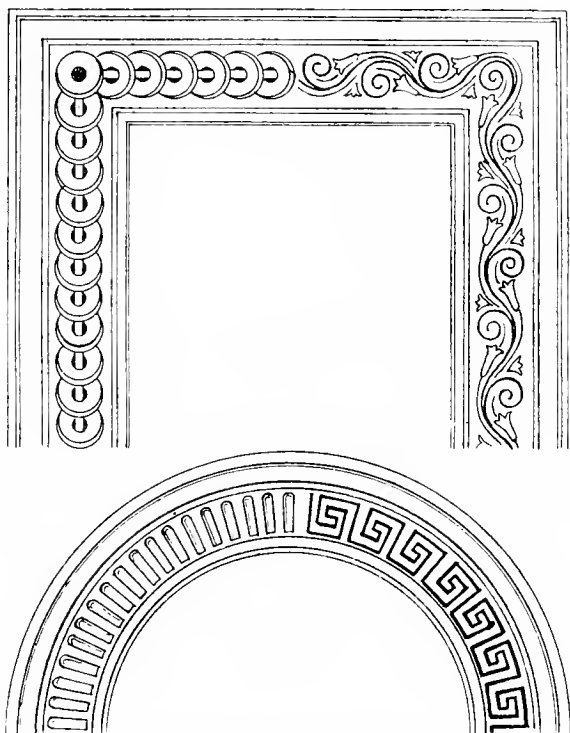


FIG. 95.—Contrasting decoration on rectangular and circular borders.

effect, leaving the varieties to be discovered by closer inspection. One of the best examples of this, though it is not in diapers, is in the Medici Chapel at Florence. Michael Angelo enriched a string there with copies

of antique masks ; in looking at the sides of the chapel the masks seem all alike, but on going near them, each one is seen to be different. Innumerable examples of ornament within network, checkers, and diapers, may be found in Saracenic, Moresque, Gothic, and Renaissance work.

To adopt forms directly from nature for the shape of any article of use is rarely successful, though the best shapes have mostly been suggested by natural

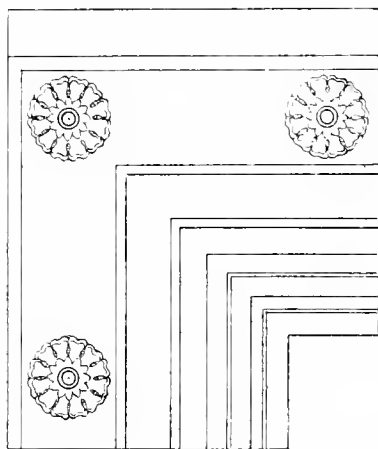


FIG. 96.—Door case at the Erechtheum showing the paterae on the fascia.

forms. The Orientals, especially those of the extreme East, have been very fond of this direct imitation, as in vessels made in imitation of a piece of bamboo, of gourds with both single and double bulbs, of eggs, cocoanuts, the horns and hoofs of animals including the horn of the rhinoceros, of shells, flowers, &c., but they mostly want stands or feet, which partly removes them from pure realism, except in the case of the

bamboo, the form of which too is not particularly beautiful. When the ancient traditions had died out in England, and the proper application of ornament

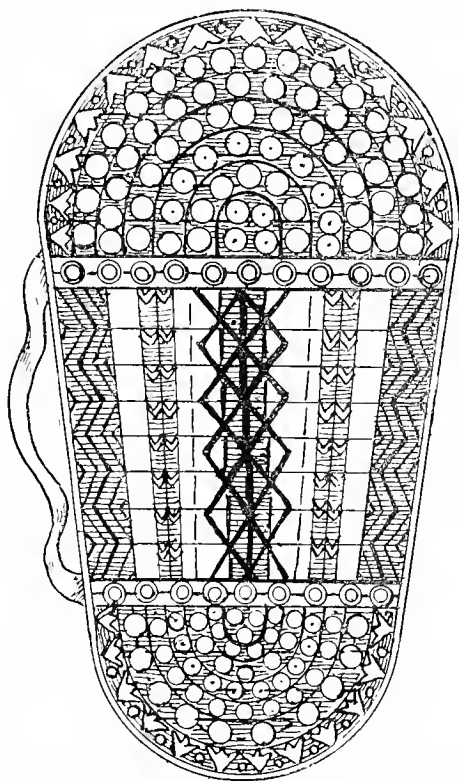
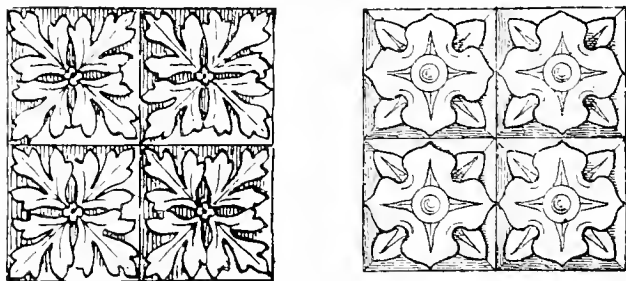


FIG. 97.—Shield made of cane and ornamented with cut shells and zigzags.

to articles of use was unknown, it occurred to many that such objects might be directly imitated from nature. Sprays of fuchsia with a large flower on each were used for curtain hooks ; branches of plants

were used for gas brackets with the flame coming from the flower ; and vases were made in imitation of the blossom of the arum. Sometimes nature itself was not vast enough for imitation ; earthenware bowls and wine-coolers were made in imitation of wickerwork, gold brooches in imitation of twisted bread, and other adaptations were made that were equally incongruous. It is true that the Japanese sometimes protect their porcelain with an outer covering of woven cane, and wicker-covered bottles



FIGS. 98 and 99.—Carved checkers.

are not unknown here. The Kafirs, too, carry their milk in woven baskets ; yet in spite of these cases, there is an apparent absurdity in such designs, not to speak of the poverty of invention they betray.

Such vagaries are happily disappearing, since the creation of museums and schools of ornamental art, but they are by no means extinct.

Every article, whether for use or ornament, should first be constructed as elegantly as possible for its purpose, or supposed purpose ; and only be ornamented when the ornament does not appear incongruous, and does not interfere with its use, but only

emphasizes its form or relieves it from monotony. Although this chapter is mainly confined to outlines and divisions of surfaces, something has been said about the application of ornament, so it may be remarked that the lower part of a wall should be treated with more severity and sobriety than the upper part; for the lower part is partly hidden by furniture, and is most liable to injury. The Romans and Byzantines mostly used marble for the lower parts of walls in magnificent buildings, though in houses of less magnificence marble was either imitated by painting, or else simple floral decoration was used. The Saracens also employed marble, but when that was not easy to obtain, tiles took its place. The Mediævals used marble, wood panelling, or tapestry, and when the walls were wholly painted, they often imitated the more costly materials. Geometrical figures or diapers are most appropriate for this part, when it is painted or papered. The part of the wall above this may be treated with greater freedom and elaboration. The part of the wall on a level with the eye should have greater finish bestowed on it, unless there be a frieze with figures or a higher class of ornament to a larger scale.

CHAPTER VI

HAVING previously considered the principal elements of ornament, it is now advisable to classify ornament in accordance with the spaces it has to fill, and these may roughly be divided into six classes or great divisions, as follows :—

1. Uniform surfaces, as floors, walls, and ceilings.
2. Horizontal bands, as friezes, &c.
3. Perpendicular bands, as panels of piers, pilasters, stripes, &c.
4. Symmetrical arrangements, as panels, either rectangular or of closed curved figures.
5. Symmetrical arrangements composed of straight and curved lines or of compound curves, as spandrels, panels of curved and straight lines.
6. Unsymmetrical spaces founded by straight or curved lines, or by both.

The uniform surfaces of large undivided areas are mostly decorated in the following ways: by all-over patterns, by diapering, checkering, powdering, or spotting. All-over patterns may be symmetrical, balanced, or one-sided, and are drawn, painted, modelled, or carved. The typical pattern, if symmetrical, has no



FIG. 100.—Waving pattern, stamped velvet, 16th century. Italian, showing Saracenic influence.

two pieces of the ornament alike in the one half; and if balanced or onesided has no two pieces alike; so that the whole is full of interest from its variety. It is, however, rarely seen, as, unless the artist does it for his own delight, few amateurs care to pay for it. It is simulated in paper-hangings by the repetition of a piece, the width of the paper (Fig. 143), called a repeat; by stencilling or pouncing the repeat, if painted; and by cast repeats, if in plaster. This is one of the cheap substitutes for the real thing which pervades European art. The Chinese formerly supplied paper-hangings that would cover a whole room without a repeat.

A *diaper* pattern is properly one contained in some repeating geometrical figure not composed of straight lines. In Saracenic and Moresque work real diapers are mostly found, a geometrical framework being laid over some interlaced floral patterns (Fig. 101). The name diaper comes from jasper, through the Low Latin *diasprum*, Italian *diaspro*, or French *diapre*, and was originally applied to woven stuffs from the East. (See Figs. 101, 106, 107, 109, and 110.) These were mostly of silk covered with small patterns in colour, that suggested the appearance of the flowering of jasper.

In vulgar parlance, it is now applied to all patterns enclosed in a repeating geometrical form. Dados in painted decoration were mostly diapered, as may be seen in one of the churches of St. Francis, Assisi; and at the Sainte Chapelle at Paris, the diapers are on painted hangings; at the Arena Chapel at Padua the dado is painted in imitation of marble panels.

Checkers and network enclosing carved patterns

are found on the walls of Gothic cathedrals and churches (Figs. 98, 99). When the space covered with checkers, network, or diapers is not too large the patterns should so far resemble one another as to give a uniform appearance, the variations being only enough to prevent disgust on a near view. Two patterns may sometimes alternate, but in very large surfaces another distinct pattern should be introduced, at certain intervals, to relieve the



FIG. 101.—Moresque diaper.

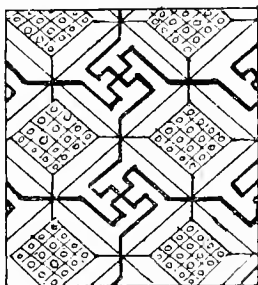


FIG. 102.—Japanese network.

monotony. Care must be taken to make the network and pattern of the proper scale for the building or room, and for the other decoration.

Diapers are found in Chinese and Japanese decoration, although rectilinear network is more common (Fig. 102), but powdering is most favoured by them (Figs. 103—105). Sometimes it is put over a pattern (Fig. 104). Powdering was, too, a favourite method of ornamenting in the Middle Ages.

The second division is ornament arranged in horizontal bands. The Greeks were pre-eminent in the use of horizontal bands in their sculptured and



FIG. 103.—Japanese powdering.

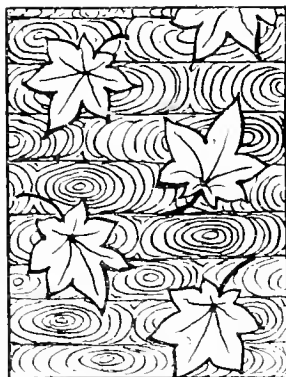


FIG. 104.—Superimposed Japanese powdering.



FIG. 105.—Japanese powdering.



FIG. 106.—Diaper, Italian brocade, 16th century.

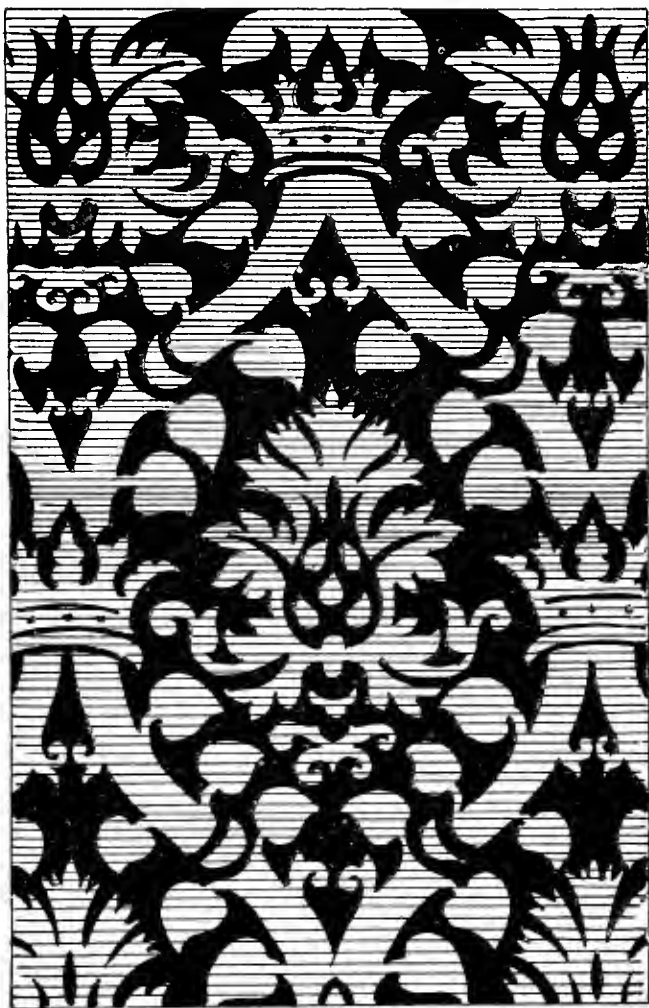


FIG. 107.—Diaper in velvet brocade, 16th century. Italian (German origin).

painted decorations. The embroidered or woven patterns on their dresses, shawls, and curtains, and the beautiful ornament on their vases, were mainly

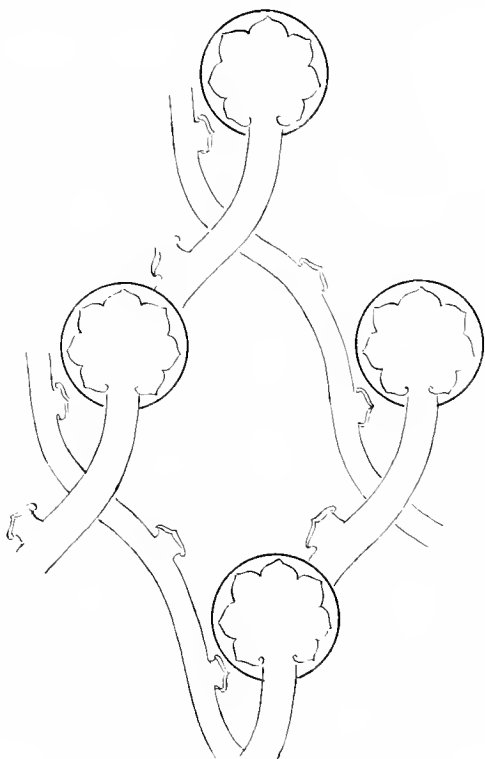


FIG. 108.—Construction lines of Fig. 109.

designed on this system. The *frieze* is a characteristic feature in Greek architecture; and if you take the band ornaments out of Greek work there is very little ornament left. Figs. 37, 42, 45, 49, 51, 52, 113,



FIG. 109.—Velvet brocade, 16th century. Italian.

114, and 115 are some of their favourite band patterns. Figs. 116 and 117 show some of the patterns on dresses taken from the Greek vases. The shawl (*peplum*) of Demeter on a vase at the British Museum has chariot races, winged cupids, animals, birds, and dolphins in the successive bands; the sacred shawls of Minerva at the Parthenon (*pepla*) are only known by description. One had the battle of the gods and giants woven or embroidered on it, and another was ornamented with the portraits of Antigonus and Demetrius Poliorcetes (Plutarch's Demetrius).

Spotting at regular intervals was the favourite way of decorating the larger surface of dresses. The circular flower that usually formed the spot in Greek ornament was composed of a greater number of petals than the Roman, and is probably of Assyrian origin. (See Fig. 116.) Saracen work also affords good examples of horizontal band treatment. (See Figs. 118 and 119.)

The third division: perpendicular bands are not so common in decoration as the former class; they are mostly architectural in character, and usually form divisions between wall-spaces in the shape of panels in piers and pilasters. Triglyphs in friezes may even be classed in this division, and so may the soffits of arches in the Classic and Renaissance styles; the decoration of the soffits of beams and of ribs and groins in Gothic, though some purists say it gives a look of weakness to the arch. When the soffits of arches are wide in proportion to their height they may be panelled, and if narrow be treated like pilaster panels, the bottom of each side

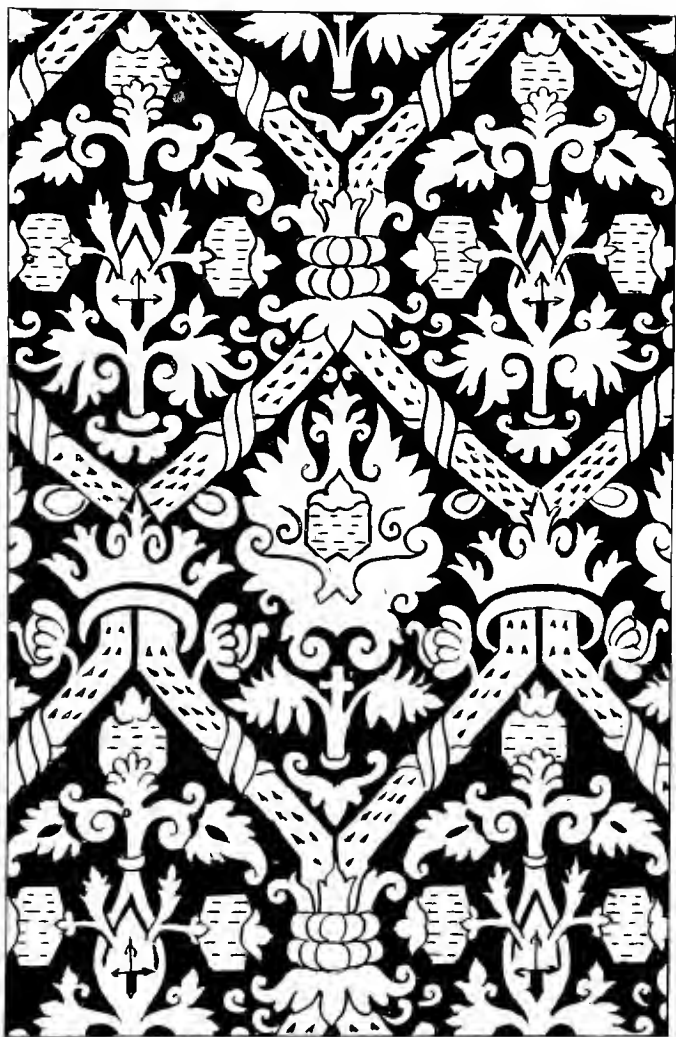


FIG. 110.—Diaper in silk brocade. Italian or Spanish, 16th century; formerly used for dress purposes, but now only employed for furniture.



FIG. 112.—Stamped velvet, 10th century. Italian.

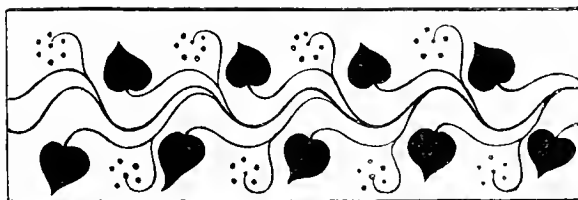


FIG. 113.—Greek ivy meander border.

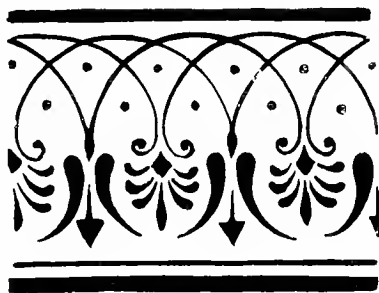


FIG. 114.—Greek border from a vase.

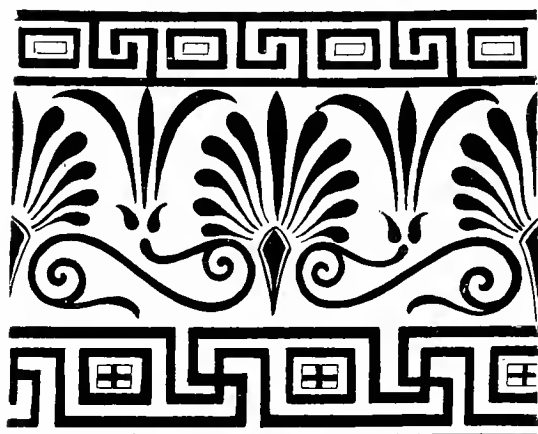
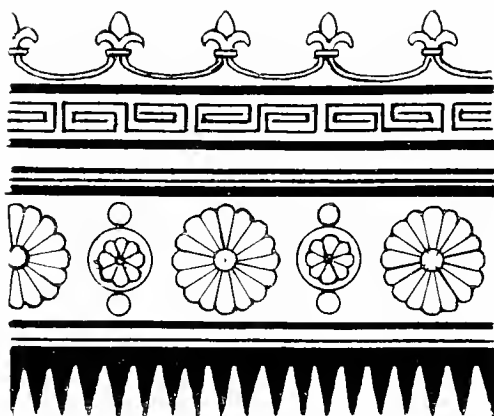


FIG. 115.—Greek border with fret bands.



116



117

FIGS. 116 AND 117.—Greek borders.

being at the springing; the tops may nearly touch at the crown, or be separated by a circular panel. The decoration of pilaster panels in relief should be comparatively low, and although some of the minor details may almost sink into the ground, there should be nothing vague; the danger to be apprehended being a loss of architectural severity



118



119

FIGS. 118 and 119.—Persian borders.

in this supporting feature. The ornament on a pilaster must be symmetrically built with the strongest elements at the base and the lightest at the top. The best examples of this kind of decoration are Roman, Italian, and French Cinque-Cento work. The latter may be seen in the well-known pilasters of Louis XII. The artists of those times paid the same attention to pilaster decoration that the

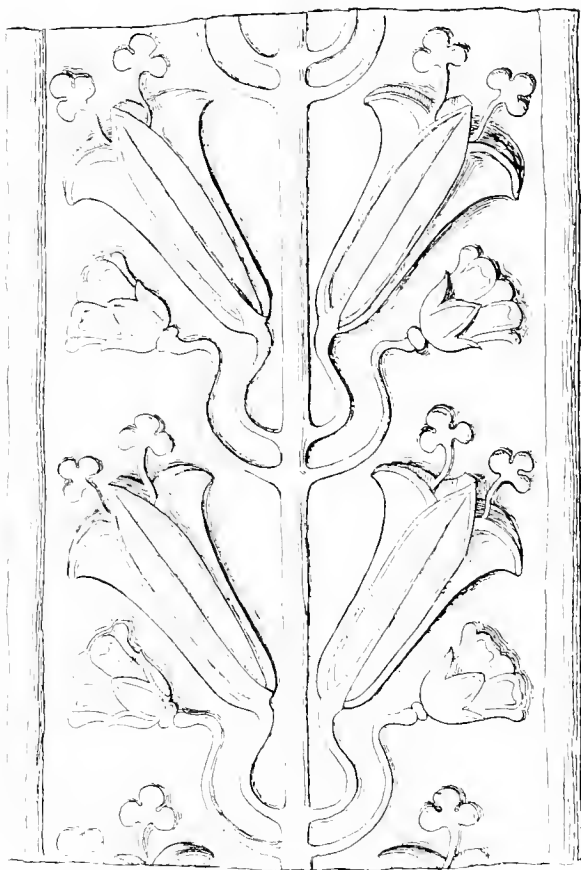


FIG. 120.—Upright lily border. Greco-Roman.

Greeks did to horizontal band-work. Figs. 121, 122, and 123 show some examples of pilaster decoration. When the main ornamental effect is obtained, the next problem to be solved is to get the greatest possible variation in the planes of the carving, so that the ornament may not have the air of being cut out with a fret-saw, with the face slightly carved and pinned on. It is sometimes well to accentuate certain portions if care be taken to avoid spottiness; occasionally the main piece of ornament, that has the greatest projection may be echoed up the pilaster with a sort of ebb and flow, only the greatest subsidiary projection should be less than the main one. Modern ornament-
 alists have insisted, that if animal forms are introduced they should be repeated, and rise in scale of importance as they get higher; but this method does not seem to have been adhered to by the Romans or Renaissance artists. In the latter we sometimes meet with cupids or children at the very base of the panel.



FIG. 121.—Pilaster designed by Donatello.

The fourth division.—Ornament in panels, &c. Ceil-

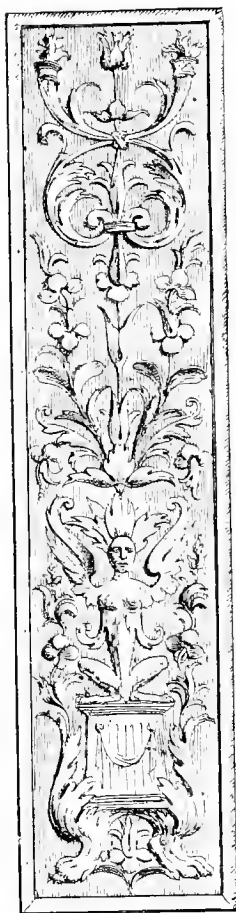


FIG. 122.—Italian Cinque-cento pilaster panel.

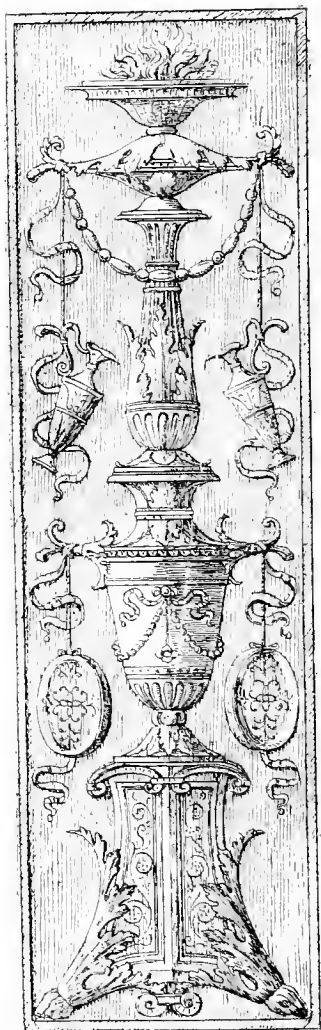


FIG. 123.—Italian pilaster decoration.



FIG. 124.—German book cover, date 1572, in four enamel colours and gold



FIG. 125.—Plaque in repoussé work, German 17th century

ings have been treated in Chapter IV., and floors cannot have real panels, so upright rectangular panels may be taken first. Their simplest ornamentation is by moulding; if the mouldings have stopped ends, they are known as linen panels. When narrow and unmoulded they may be filled with symmetrical ornament



FIG. 126.—Venetian panel illustrating “balance” without symmetry.

on either side of an upright stem, either purely floral (Figs. 148 and 120), or after the manner of pilaster panels, or the ornament may spring from vases at the bottom (Fig. 127), or they may have central medallions circular or oval, *pateræ* or bosses; and in cases where these narrow panels are in a long succession, each one may be varied, or the centres alone may be varied, if the

size and weight of the centres be preserved ; circular and oval panels in moulded frames should be avoided in woodwork on account of the chances of the mouldings splitting. In Saracenic and Moresque work the

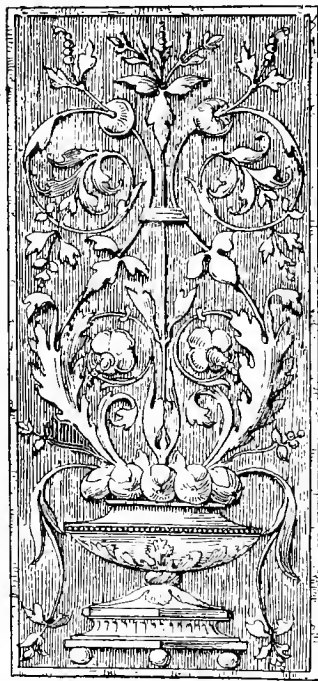


FIG. 127.—Cinque-cento panel.

panels are mostly filled by diapers, and in late European work it was common to enrich the corners, and sometimes to form a centre, leaving the rest of the panel plain, spotted, powdered, or filled with interlaced work.

In ornamental panels the mouldings of the frame

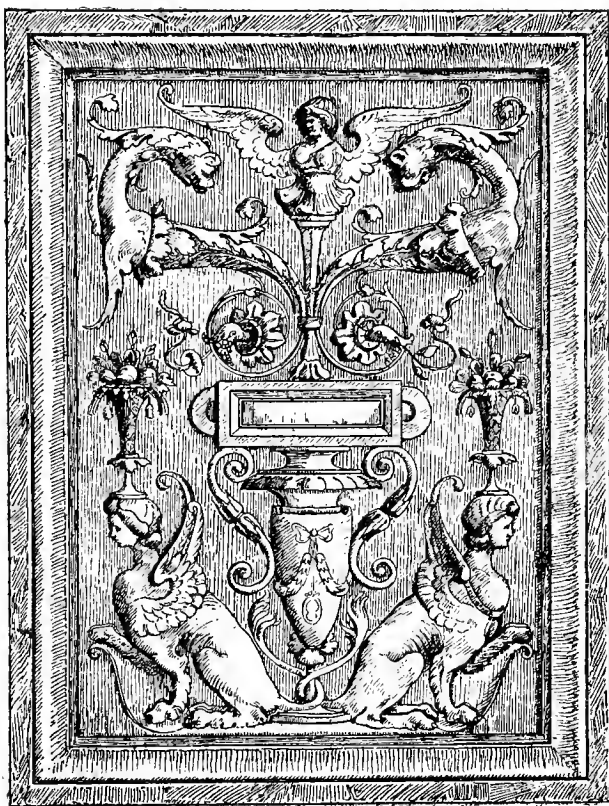


FIG. 128.—Renaissance panel ornament.



FIG. 129.—Wine crater in silver from the Hildesheim treasures. Antique Roman. ✓

must never be wholly ornamented (see Fig. 128); sometimes they may be wholly plain, but if there be several mouldings, it is well to slightly enrich one member to connect the frame with the panel and detach it from the plain stiles and rails; these should



FIG. 130.—Cinque-cento floral ornament composed of the acanthus, oak leaf, convolvulus, and wild rose, &c.

never be carved when enriched panels are used. When great richness is required, and the panels are carved, inlay or incised ornament is the best form of enrichment for the stiles and rails.

The fifth division.—Compound shapes such as spandrels, segmental pediments, compound panels, and

tail-pieces (Figs. 134, 135), the last known in France under the name of "lamp bottoms," some arms and pieces of armour and some utensils (Fig. 133).

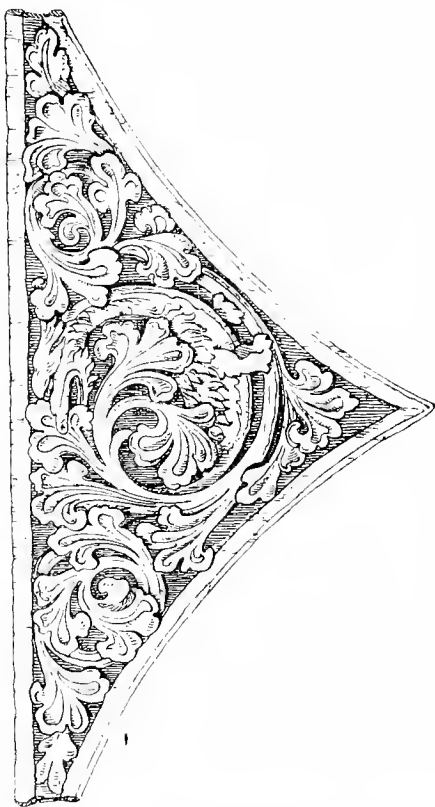


FIG. 131.—Gothic spandrel from Stone Church in Kent.

In spandrels between two arches a slight deviation from symmetry may be allowed if the sides are well balanced, but it requires great skill to render the ornament satisfactory (Fig. 131). If the arch mould-

ings are properly emphasized, the spandrels may have a free and unsymmetrical treatment, for they



FIG. 132.—Spandrel by Stevens.

do not appear so constructively important as the panels of pilasters, and so greater freedom is allowed to the artist. The Gothic spandrel (Fig. 131) from Stone Church, in Kent, is a good example of balance.

The sixth division.—Unsymmetrical spaces to be filled with ornament are rare, being mostly found in Saracen work and in arms and utensils, except in the case of angular spandrels composed of a vertical and



FIG. 133.—Panel with trophy of arms and armour.

horizontal line and a segment (Fig. 132); in all these cases, balance must be the principle employed. Fig. 132 shows a well-balanced design for a right-angled spandrel between a round arch and a vertical line, the work of the late Alfred Stevens.



Fig. 134.



FIGS. 134 and 135.—Tail-pieces (Renaissance), or lamp bottoms.

CHAPTER VII

THE ornamentalist is more indebted to plants and flowers, both for materials and suggestions in design, than to any other division in the domain of nature. The best conventional and æsthetic floral ornament was the outcome of the study of plants and flowers. That characteristic Greek ornament, the honeysuckle or anthemion, is said to have originated from the Egyptian lotus flower, or the Sacred Hom, and not from the honeysuckle ; the conventional rendering of this flower in ornament is said to have been adapted from the Egyptian forms by the Chaldæans ; and later the children of those ancient flower-worshippers, the Assyrians, developed the pattern into more ornate forms. The Greeks in their turn are supposed to have copied the anthemion from the Assyrians : at first it was archaic and stiff, but full of vitality as ornament, and well adapted for its various uses and positions ; and at last perfected to such a degree of æsthetic purity in the Erechtheum, as to lose all traces of any particular plant, while embodying the best qualities of plant-growth ; for in it we see vigorous life combined with grace and elegance.

Another phase of floral and leaf growth, and its

proper development into pure ornament, can be studied in the many rosettes of the various styles. These are circular in plan, and would appear at first sight to be derived from flowers, but are mostly a cluster of leaves, radiating like the spokes of a wheel, either straight or curved.

There are many plants—for instance, the bedstraw and the madder—that have their sets of leaves arranged in a whorl round the joints of their upright stems; looking down on these leaves we notice that the plan appears like a rosette. This idea may have occurred to the ancients when designing their rosettes.



FIG. 136.—Rosettes or pateræ from Roman ornament, composed of leaf and floral forms.

The results, obtained by grouping a cluster of leaves together in this manner, are finer and stronger in appearance than any imitation of flowers, particularly in sculptured work. (See Fig. 136.) Leaflets and bracts growing at the junctions of stems and leaves also furnished ideas and forms for the making up of rosettes and similar ornament; but more use is made of these bracts in what is called "clothing stems," or sheaths, some varieties of which are illustrated at Figs. 137 and 157; in fact, very good ornament is often composed of a stem or meander clothed with these bracts alone. Root forms are not much used in European ornament, though Indian, Saracen, and Mediæval decoration abound in examples of the

treatment of roots. (See Fig. 138.) The objection to their use is this, that it gives the whole ornament the appearance of having been pulled up and hung to dry. This must always be an objection to their use, unless the root can be shown in the ground; consequently the Roman and Renaissance artists let their ornament



FIG. 137.—Bracts used for "clothing" stems in scrolls, &c.

spring from vases or clusters of leaves. When roots are used it is clear that the general outline of the root must alone be taken, and the character of the growth expressed simply, to prevent confusion and obscurity.

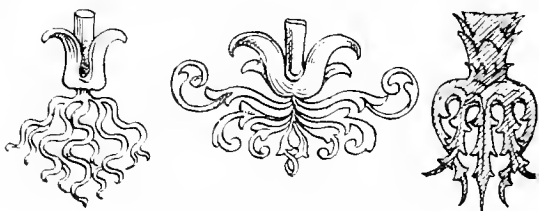


FIG. 138.—Mediæval and Oriental root forms.

As a rule, all redundances, excrescences, and accidental waywardness of growth, that might be interesting to a botanist, ought to be avoided in the decorative rendering of plant form; the average form and the higher beauties should alone be expressed. Though this may seem a paradox, the less realistic

we make our designs, the more nature we put into them. We should strive to put the most perfect forms of nature into our ornament, avoiding those that are poor and stunted, as well as over-nourished and rank ones, though nature abounds in both.

In Persian¹ ornament we find flower and plant forms treated in a thoroughly decorative manner



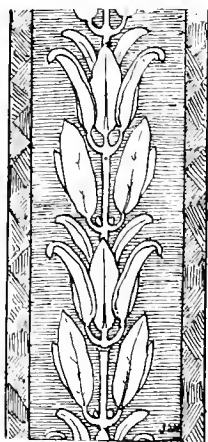
FIG 139.—Laurel from nature.

(Figs. 118 and 119); the pink and hyacinth were as great favourites with Persian decorators as the maple and vine were in mediæval work, the lotus and

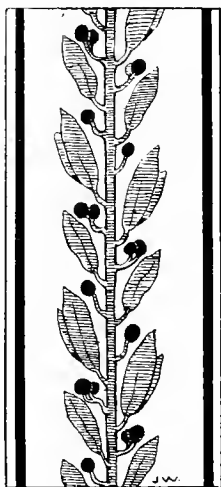
¹ There are many styles of Persian ornamentation—that of the Achæmenides, probably that of the Macedonians after the conquest of Persia by Alexander the Great, that of the Sasanides, that of the Saracens after they conquered the country, and their ornamentation was doubtless influenced by the subsequent Mongul conquest. That ornamentation which is generally called Persian, except modern work, seems to be Saracenic.

papyrus in Egyptian, the peony in Chinese, and the chrysanthemum in Japanese ; while such styles as the Greek, Roman, Celtic, and Saracenic are more purely conventional, and, without having much realism, are still based on natural forms.

Students in design cannot be too strongly advised to cultivate the habit of making correct drawings of



140



141

FIGS. 140 and 141.—Borders derived from the laurel.

all kinds of plants, both in flower and fruit, especially those of single flower and of simple growth, accompanied by careful notes of the construction at the stem and leaf junctions.

The botanical analysis of a plant may serve a scientific end, and be useful to show the student the construction of the plant, but it makes a very poor show in an artistic design. Landor the poet said it

was an act of cruelty to cut a flower from its stem : it would be interesting to know his opinion of that school which believes in dissecting plants to find "new forms," many of whose designs present novelties that nature never dreamt of, such as leaves neatly cut in half, elevations, and sections of petals, stamens, pistils, seed pods, and other curious forms suggested

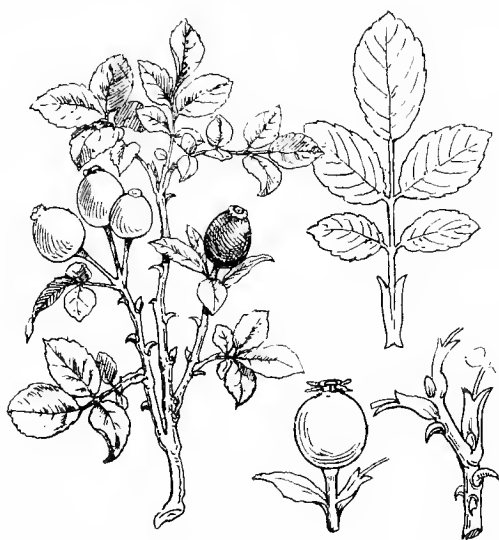


FIG. 142.—Wild rose from nature.

by these dissections, so that the design when completed is an anatomical preparation, and certainly innocent of any violation of the second commandment. A section through some flowers may, however, give suggestions of outline for some flat ornament. The testimony of the best old decorative design is against this practice. It is refreshing to see that in England

a reaction is setting in, mainly owing to the efforts of such men as Sir Edward Burne-Jones, Messrs. Morris, Crane, and a few others, who prefer nature to novelty.

In selecting plants for particular purposes, it is well to bear in mind the material to be decorated, whether

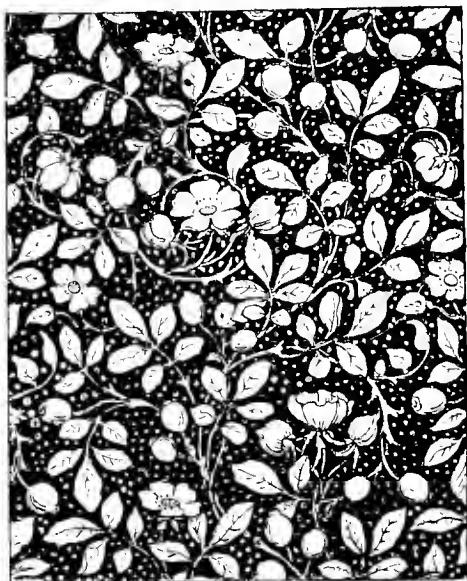


FIG. 143.—Design for a paper-hanging from the wild rose.

it be woven stuff, wood, or metal-work, and to choose the kind best adapted to the purpose—as the hare-bell, the wild poppy, grasses, and delicate ferns for muslins, cottons, and lace; the oak, orange, lemon, pomegranate, and the mallow for wood- and for stone-carving, and for iron-work. At the same time, a too rigid adherence to these principles is not to be advised. What is of most importance is to adhere to the growth

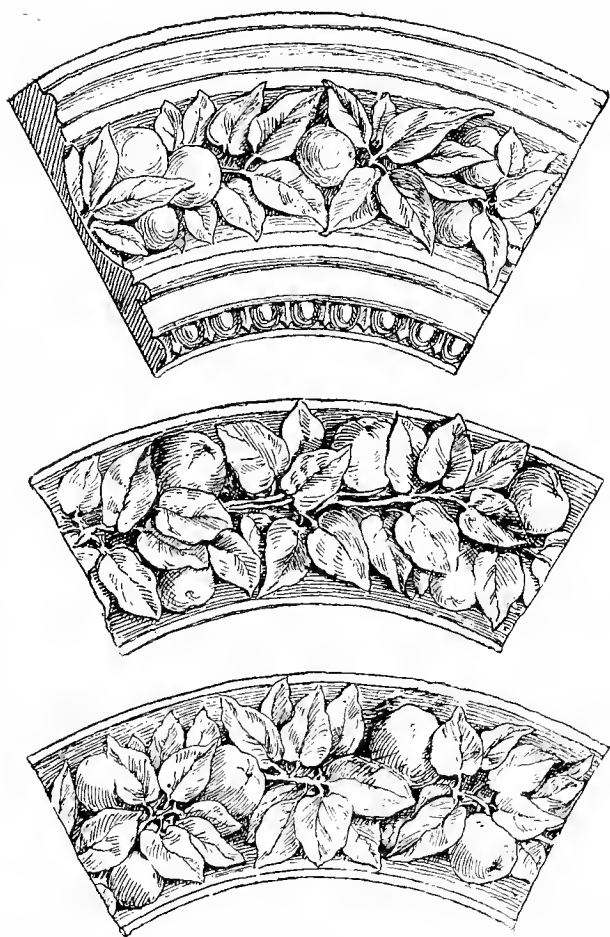


FIG. 144.—Borders of medallions in enamelled earthenware by Luca della Robbia.

and character of the plant we use ; for instance, a plant like the laurel (Fig. 139) is best suited for an upright or horizontal border. (See Figs. 140, 141.) The wild rose (Fig. 142) and the lemon (Fig. 145) are both



FIG. 145.—Lemon from nature.

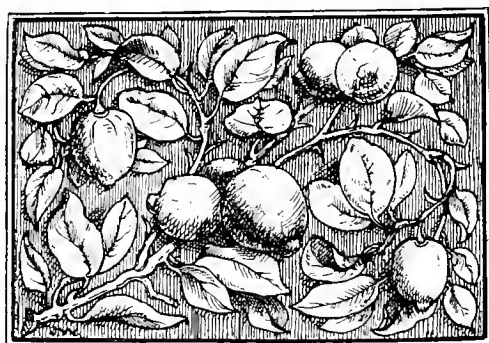


FIG. 146.—Design for a carved wood panel from the lemon plant.

suitable for panels of almost any form, for all-over patterns, or for paper-hangings, &c. (See Figs. 143 and 146.) For narrow upright panels, plants of upright growth, such as the lily, the ox-eye, and the iris, &c.,

are most suitable. (See for illustrations Figs. 147 and 148.) A trailing vine makes a good ceiling decoration, and was so used by the Byzantine mosaic workers.



FIG. 147.—Tiger lily from nature.

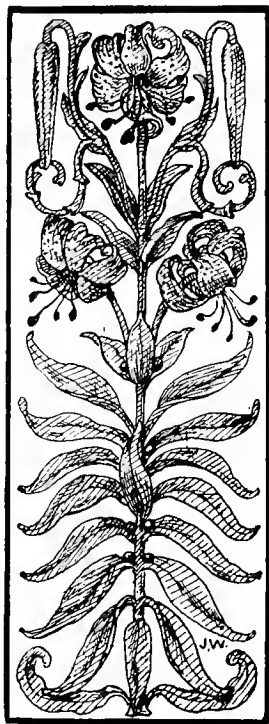


FIG. 148.—Panel arrangement from the Tiger lily.

Lastly, plants of horizontal growth, such as the dandelion, the daisy, &c., looked at from above, might be best adapted for a floor, a carpet, or a table-cover.

The well-known conventional *acanthus* and its varieties must now be described. There have been various suggestions concerning the identical plant from which the acanthus ornament is derived, but, like the anthemion of the Greeks, there is some



FIG. 149.—*Acanthus Mollis* from nature.

obscurity about it. The story told by Vitruvius of the sculptor Callimachus having the Corinthian capital suggested to him, by finding the plant growing round a basket covered by a square tile, is a plausible and certainly a pretty one (Vit. lib. 4, cap. 1). At any rate, Callimachus is credited by Vitruvius with the first use of the acanthus in capitals. The ornamental forms of the acanthus

bear little resemblance to the natural leaf. (See Figs. 149, 150, 151, and 152.) The two latter are



FIG. 150.—*Acanthus spinosus* from nature.

leaves from Greek capitals, the first two have been drawn from nature. The acanthus, as we know it in the capitals of the Greek and Roman Corinthian,

and the Roman Composite orders, is an artistic creation, adapted to suit the ends of a grand style of architecture, and not an imitation of a particular leaf. The characteristic difference of the classic ornament from the natural leaf lies in the "pipes" that start from the "eyes" at the base of the leaflets,

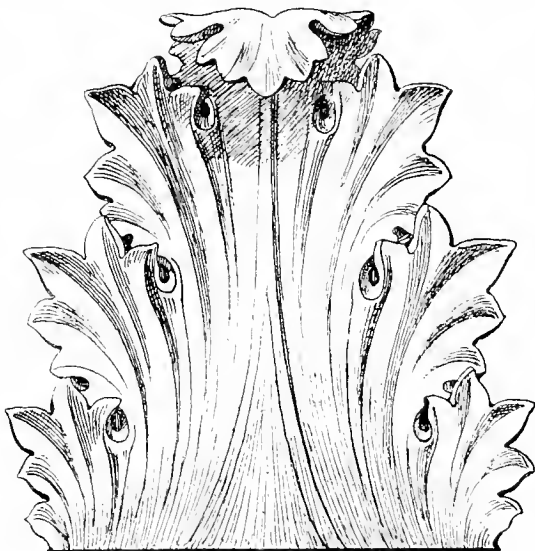


FIG. 151.—Greek acanthus leaf from a capital of the Tower of the Winds.

and, somewhat contrary to nature, taper downwards to the base of the leaf; these pipes, together with the central stalk, impart that strength and dignity which is necessary for architectural foliage, especially when it adorns the bell of a capital. (See Fig. 154.) The pipes are less important, and are consequently less marked in examples of smaller work, such as may

be found in the acanthus of candelabra and panels, in which constructive strength is not required.

On the Corinthian capital, the acanthus presents a simple edge exactly repeated on each leaflet, with far less serration than is seen in the natural foliage: this imparts dignity to the leaf. On modillions a

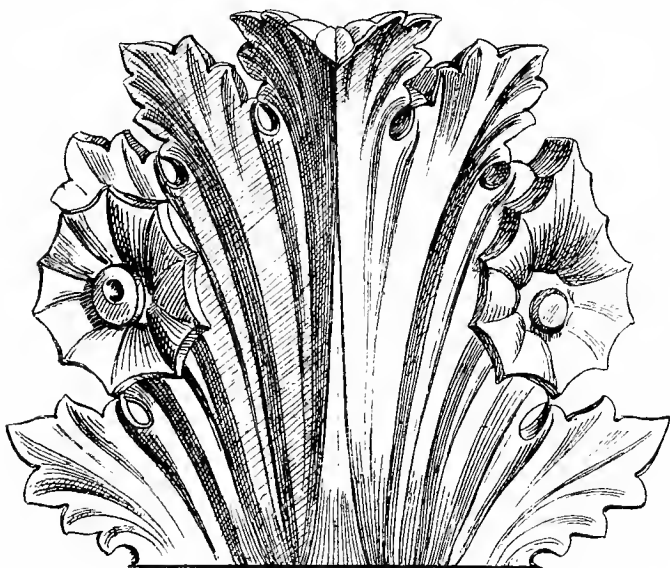


FIG. 152.—Greek acanthus leaf with flowers from a capital of the Choragic Monument of Lysikrates.

more serrated and smaller variety is used, with the stalks and pipes still prominent; while on candelabra and small pillars the leaves lie flatter, and the leaflets overlap, and owing to the fact that the leaves are smaller in scale and nearer to our eyes, more serrations and more detail may be put into them, for the smaller the scale the more detail is necessary.

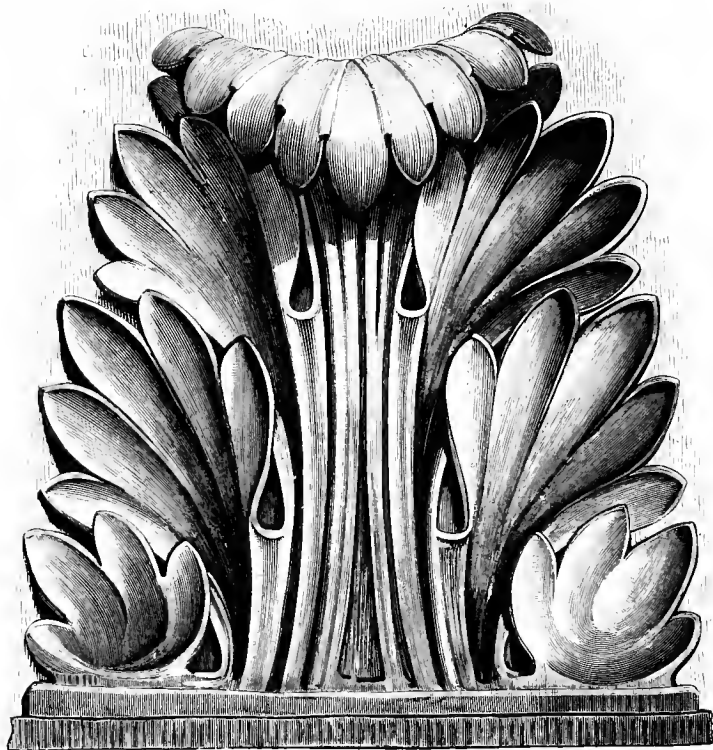


FIG. 153.—Roman leaf of capital,—the olive leaf acanthus variety,—see Introductory Chapter.



Plan showing stalk, pipes, and undercut channels of Fig. 153.

(See Fig. 156.) To prevent the foliage in the latter examples from appearing flimsy, as it would naturally do with an overlapping edge much cut up, the edges of the leaves should be slightly thickened and rounded so as to catch the light, thus giving a rich quality to the decoration. The Greeks mostly used

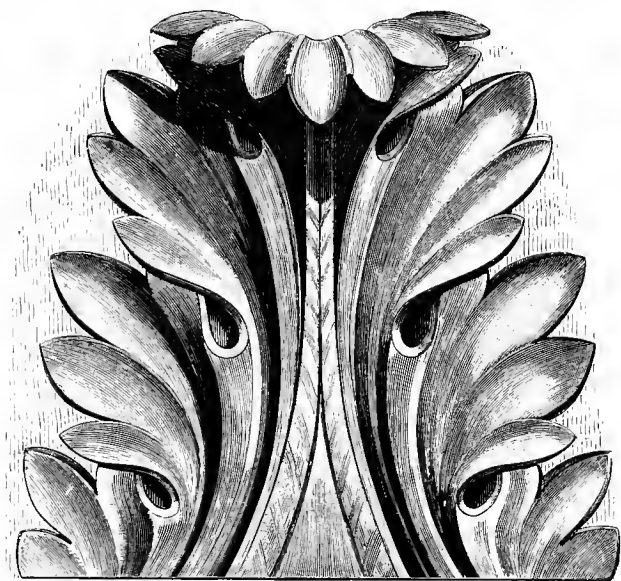


FIG. 154.—Acanthus; olive leaf variety from a capital of Mars Ultor.

that kind of acanthus that is known as the *Acanthus spinosus*, or the prickly variety; the Romans preferred the *Acanthus mollis*, or the soft-leaved kind. The olive-leaf has been used for the raffles of the leaves in the capitals of Jupiter Stator, Mars Ultor, and the Pantheon at Rome (see Figs. 154, 185, and 188), while at the Temple of Vesta at Tivoli the

capitals have the oak-leaved variety. A bit of the soft-leaved acanthus is shown at Fig. 155 from the soffit of the architrave at the temple of Jupiter

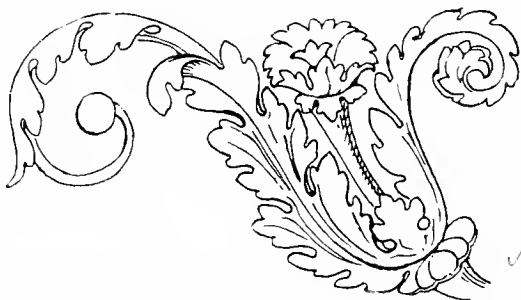


FIG. 155.—Soft-leaved acanthus from the soffit of the architrave at the temple of Jupiter Stator.

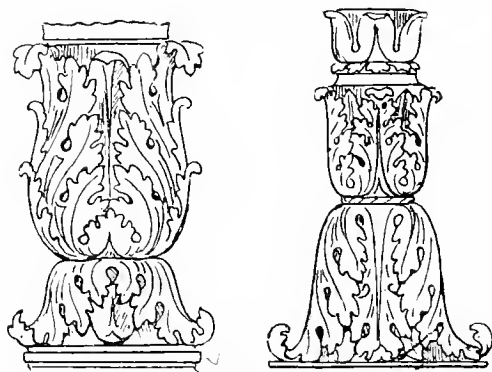


FIG. 156.—Acanthus used on candelabra and small pillars.

Stator. The Romans sometimes used the acanthus in a lavish way, overloading mouldings with it; the cornice of the Temple of Jupiter Tonans, for instance, is overdone with decoration. (See Fig. 186.) The more modern type of acanthus used on majolica

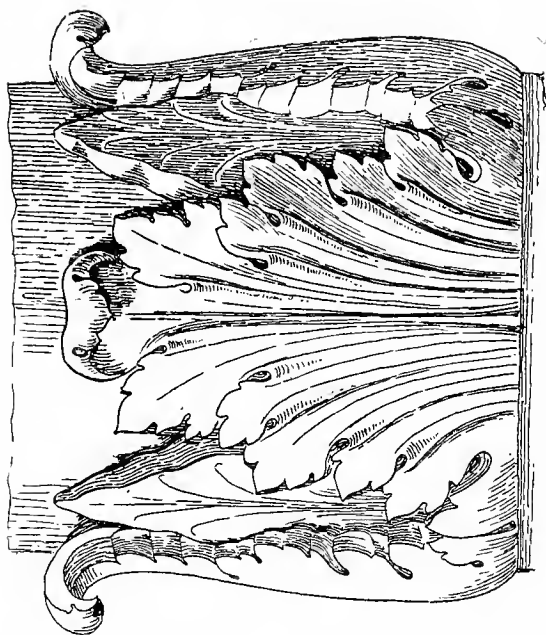


FIG. 158.—Acanthus and water leaf foliage from an antique Roman shaft.

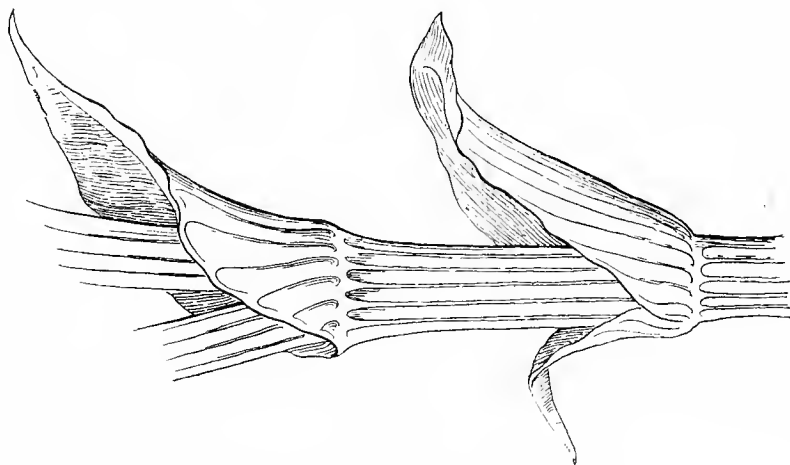


FIG. 157.—Water plant stem, showing channelling.



FIG. 159.—Modern varieties of sea-weed and poppy-leaved acanthus used in decoration.

* plates and in painted decoration is of a very free character, but it only holds a secondary place, being generally found in combination with animal forms and grotesques. The utmost freedom in the curve and reflex curve may be allowed in the painted forms of the acanthus; this being logical enough when we consider that the greater part of the leafage is generated by the free play of the brush. (See Fig. 159.) The arabesques of the Vatican, and the Italian cinque-cento ware, afford the best examples of this painted foliage. The acanthus was the parent of nearly all the subsequent styles of decorative foliage down to the Saracenic and late Romanesque, and its modifications have shown the difficulty of improving on the Classic type. We are advised by ornamentalists and writers on art to seek for a new leaf that might in time rival the acanthus in ornament. The advice may be good, and many have given their attention to it, but no lasting results have as yet been obtained. Of late years there is a kind of scroll-work much favoured by some ornamentalists. It cannot of course be called new, few things can be in this world; but its persistent application, from illumination to stone-carving, will perhaps in time stamp it with a traditional character. The foliage is more like sea-weed than anything else, but it also has a faint resemblance to the acanthus, the ox-eye, and the wild poppy (Fig. 159). We have no fixed principles of ornamental art; even ornamentalists themselves disagree as to what is good, and what is bad, so that nothing lives long enough to become national ornament. How can we hope to vie with the ornamental

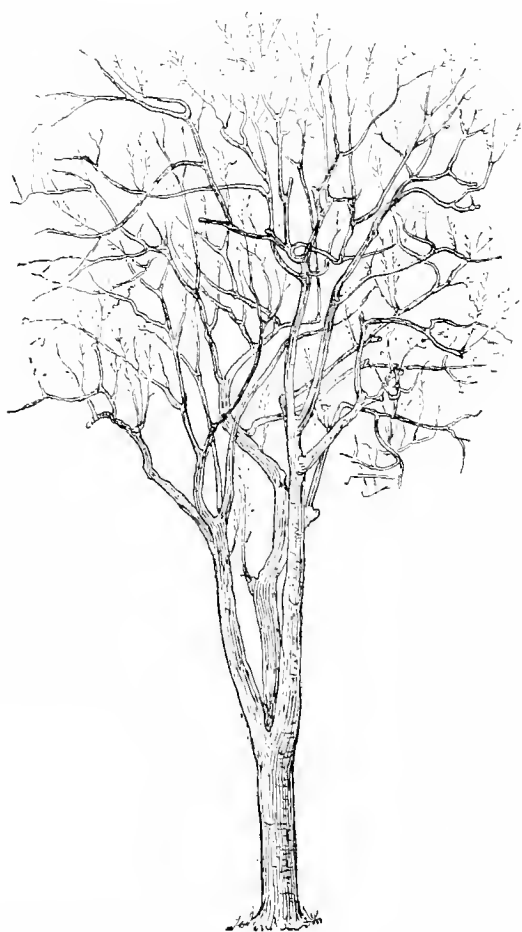


FIG. 160.—Winter aspect of a pear tree, illustrating "balance" in nature.

art of Greece, when the artists disagree and the nation is indifferent; while the Greeks enjoyed unity of artistic thought, and gloried in the worship of the beautiful? To gain a fuller insight into the delicate varieties of the acanthus, the student is advised to carefully examine and draw the foliage in the pilasters of Louis XII.'s tomb. The late Alfred Stevens has done more than any one of late years to properly apply the acanthus. (See Fig. 132.)

CHAPTER VIII

THE “*symbolic*” and “*mnemonic*” classes of ornament are large, and are interesting alike to the historian, the antiquary, and the student of art. It is not easy to draw the line between them, as the latter skirts the ground of the former so closely. Mnemonic ornament is that class which includes written characters, signs, hieroglyphics, and natural forms as aids to memory. The scenes, facts, or ideas so recalled may or may not be in relation to the thing decorated; *e.g.* we see texts from the Korân in Kufic and other characters, used to decorate the walls and gateways of mosques, and dresses, vases, candlesticks, and other articles of domestic use. Japanese ornament abounds in mnemonic characters with or without other forms. All writing came from the picture-writing of barbarous tribes; the symbols of these pictures were used on the one hand for letters, and on the other for ideas. In the decorative art of most nations, inscriptions can be found on their buildings, utensils, and articles of luxury; and as in the case of some illuminated manuscripts, it is not only difficult to know where the lettering ends, and the ornament begins, but

whether the main end was not ornament rather than instruction. The art of illumination or decorative writing really begins when there is a desire to have the written matter presented in a beautiful form, and to those who could not read the illumination alone was of importance. In the hands of artists letters have often been arranged as a highly ornamental cipher. *Monogram* and *cipher* are almost synonymous terms; the former differs only from the latter in this respect, that a monogram may have different forms of the letters in different positions, and still have the same meaning, while a cipher cannot have more than one particular form or else it defeats its purpose, if used as a signet or as a trade-mark. The decorations found on the tombs, sarcophagi, and stone tablets, &c., of ancient Egypt are mnemonical in character, and this was the primary reason of their existence: they were sculptured on the granite slabs, to record the names and virtues of the deceased kings and persons of note, but at the same time they were made pleasing to the eye; the perfect balance and even distribution of these inscriptions render them highly decorative, and they become mnemonic ornament. (See Fig. 162.) This diagram is the hieroglyphic inscription taken from the famous "Tablet of Four Hundred Years." It is the third line of the twelve on this monument, and is thus translated: "King of Upper and Lower Egypt, Ra-user-ma, Sotep-en-ra, Son of Ra, Ramases Mer-amen, Chieftain enriching the lands with memorials of his name." The inscription at Fig. 163 occurs frequently in Japanese pottery; it represents the word "Jiu," meaning longevity or everlasting life.

The Japanese symbols of longevity are the following : the god of longevity, a very old man with a large head and merry countenance, holding a scroll in his hands, and accompanied by a crane, as an attribute, and sometimes by a stork or a sacred tortoise. The crane itself is a symbol of long life ; the bamboo, the fir, and the plum together make a second ; and the gourd is another. Religion has had, from the earliest period of man's history, Art for its earthly hand-maid, and nine-tenths of symbolic ornament pertains to religious ordinances and ceremonies. Nearly all the beginnings of art expressed religious thought by means of symbols ; the picture writing of barbarians, the hieroglyphic or priestly compositions of the Egyptians on papyrus and granite, the Runic and Ogham inscriptions of the Northmen and ancient Celts, were alike endowed with an occult meaning, but they were symbols to the initiated only. A good example of symbolic ornament may be seen at Fig. 164. The winged globe so common in Egyptian art has been found sculptured on the lintels of temple doorways almost thirty feet in length. The globe is said to symbolize the sun, the outspread wings the overshadowing presence of Providence, and the asps dominion or the monarchy. The Scarab, or winged beetle (Fig. 161), is an emblem of the Creator or Maker. The disc or ball that it holds between its claws is said to represent the Sun, from which all life is derived. Another and more natural meaning attached to the disc is that it represents the ball containing the egg which the beetle usually rolls to a place of safety, where it is buried, and in course of time new life will spring from it. This emblem occurs as a

central ornament in some Egyptian ceilings. Nearly all Egyptian ornament was symbolic. The canons or laws laid down by the Egyptian priests and chief scribes for the guidance of artists were for centuries unvarying ; every ornament, including representations of the human figure, was drawn and sculptured by rule, and no one was allowed to alter the type under severe penalties. The blue Nymphaea or lotus flower is pre-eminently characteristic of Egyptian ornament (see Fig. 165) ; it was sacred as the type of coming



FIG. 161.—Egyptian Scarabeus.

plenty, as it appeared just before the springing of the crops, and immediately after the subsidence of the Nile ; it was therefore to the Egyptians the harbinger of their daily bread, so there need be little wonder that it was worshipped by them as the emblem of earthly goodness. There is a species of lotus that bears fruit, and it is said that the form of the Jewish seven-branched candlestick was derived from it. The lotus was used in the decoration of everything Egyptian, the fresh flowers were used in garnishing the offerings to their gods, and was also presented as a peace offering to strangers and visitors. Next



FIG. 163.—Japanese inscription, "Jiu," or "long life."

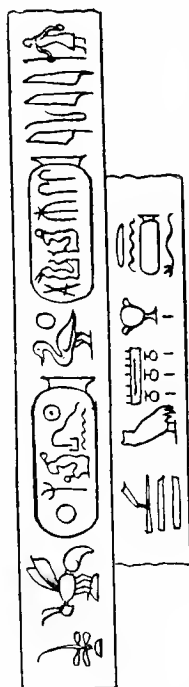


FIG. 162.—Inscription from an Egyptian tablet



FIG. 165.—Symbolic ornament, the Egyptian lotus and water.



FIG. 164.—Winged-globe and asps, Egyptian Symbolic ornament.

in importance to the lotus came the palm as a symbolical plant; this was used by the Assyrians in their bas-reliefs. It was, when surrounded by the sacred hom, called the "tree of life" (Fig. 166). The date-palm is here surrounded by the sacred hom, which grew on the slopes of the Hindoo Kush, and was the plant from which inebriating drink was first

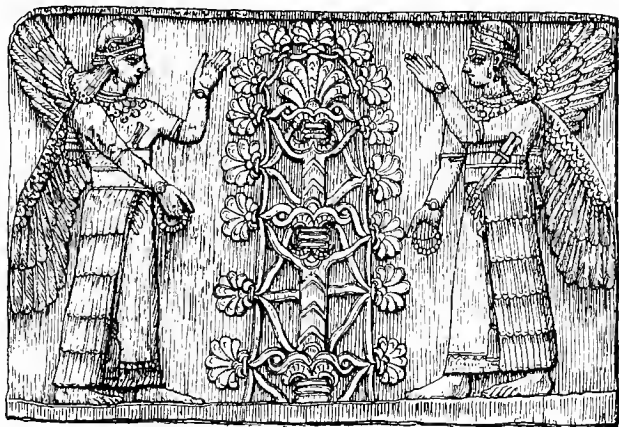


FIG. 166.—Sacred tree of life or hom (British Museum), from an Assyrian bas-relief.

made by the Aryans. The date-palm was certainly the tree of life to Eastern nations, affording them food, alcoholic drink,¹ and shelter. Many animals, birds, and hybrid creations, such as the Egyptian sphinx and the winged bull of Assyria, had symbolical meanings.

The fir-cone, so common in Assyrian ornament,

¹ In the sixteenth chapter of the Korân called the "Bee," it is said, "and of the fruit of the palm-trees and of grapes, ye obtain an inebriating liquor and also good nourishment."

was an emblem of fire, as the lotus was an emblem of water, and this cone placed on a staff, and adorned with ribbons, was carried by the Bacchanals and Mænads when celebrating the festivals of Dionysus, the Greek Bacchus. This is known as the "thyrsus," or staff of Bacchus. (See Fig. 167.) The pine-tree was sacred to Dionysus, from its supplying turpen-

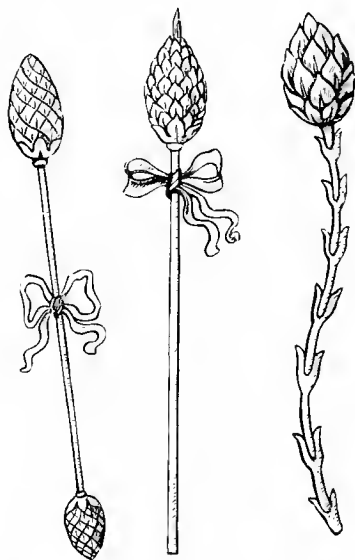


FIG. 167.—Three forms of the thyrsus or staff of Bacchus. √

tine to make torches; wine also was made from its cones, both important elements in these festivals. The head of the thyrsus was often made of ivy leaves instead of the pine-cone, and Bacchus is said to have concealed spears under this head of leaves, and thus overcome those who were inimical to him (Diodorus

Sic. lib. iii. cap. iv. ; Ovid's *Metamor.* iii. 667). The vine and the ivy were also sacred to Bacchus, and are symbolical of him in Greek and Roman decoration. Early Christian and mediæval art are also teeming with symbolic ornaments. These ornaments are often called indifferently "emblems," "attributes," "symbols," &c. Allegory is a kind of parable, and the word is often applied to allegorical painting or sculpture, which is a representation of one thing under the image of another, and is mostly expressed by human or animal forms.¹ In a recent picture called "Hope," by Mr. Watts, we have a fine allegorical illustration, in a figure seated on a sphere, or the world, bending her ear to catch the strains of a lyre which she plays, which has only one string left ; there is a weird feeling of loneliness about the composition, just relieved from utter desolation by the music that is left in the one string.

¹ "Eve's tempter thus the rabbins have express'd,
A cherub's face, a reptile all the rest."—POPE.

CHAPTER IX

THE arabesques of the Vatican have been noticed before ; there were, however, arabesques on the ceiling of the Sala del Cambio at Perugia, painted by Perugino, Raphael's master, also in the Borgia apartment at the Vatican, and in the Villa Madama ; arabesques of the latter are said to have been copied from the plaster work in Hadrian's villa near Tivoli.

Raphael, being one of the greatest modern painters, added to the beauty of this sort of decoration by the exquisite drawing and composition of the figures. Some of the medallions at the Loggias contain subjects said to be taken from antique gems, and Scripture subjects are also introduced ; the expulsion of Adam and Eve from Paradise is balanced by one of Omphale and Hercules, the queen having the club.

When a cipher or a sign conveys to our minds an idea, or an association of ideas, we call it a "*symbol*," particularly if the idea is connected with religion. The commonest form met with in symbolic art is the circle, as the symbol of eternity, from its having neither beginning nor ending ; it often appears as a serpent with its tail in its mouth, for this, like many other Pagan symbols, was adopted by the

early Christians. The circle in the shape of a wheel has perhaps had the widest signification in art. The wheel of fire, or sun-wheel, was an emblem of the Teutonic sun-worshippers. The *tchakra*, or sacred wheel, is the emblem of the religion of Brahma ; it is the shield of Brahma and Vishnu, as a wheel of fire ; it is to the Siamese a type of universal dominion, a sign of disaster, and the symbol of eternity. (See Fig 168.) The wheel form at Fig. 169 is the *kikumon* or badge of the Empire of Japan ; it is derived, however, from the chrysanthemum.



FIG. 168.—The “*tchakra*,” or sacred wheel of Brahma and Vishnu, also called the “wheel of fire.”

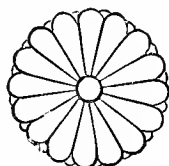


FIG. 169.—*Kiku-Mon*, badge of the empire of Japan.

Christian art, from the beginning of the first century of our era to the fourth, consisted almost entirely of symbols. The first Christians were fearful lest their new converts should relapse into Paganism, and so avoided images ; and being persecuted they used only a few symbols such as the fish, the dove, the lamb, and the monogram of Christ. This last consisted of two Greek letters X and P (Chi and Rho), the Chi forming the cross as shown at A in Fig. 170 ; another form of this is shown at B, in which a cross has the Rho formed on the upright stem, and has the first and last letters of the Greek alphabet (Alpha

and Omega) written beneath the arms. This form sometimes appears on the nimbus over the head of a lamb; the latter sometimes stands on a round hill, at the bottom of which issue four streams, the whole symbol signifying "Christ the first and the last, the Lamb of God," the streams "the four evangelists whose gospels are the water of life to the whole world."

At C, Fig 170, we have the monogram that the Emperor Constantine placed on the *labarum*, or

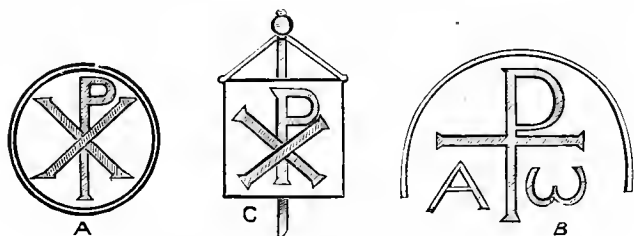


FIG. 170.—Sacred Monograms in Christian Art.

Imperial standard, after his conversion; it was woven in gold on purple cloth. Christ was sometimes represented as Orpheus, with a lyre in his hand, amid the birds and beasts; the commonest personification of Him was, however, as the Good Shepherd caring for His sheep, in which He was always represented young and beautiful. Every allegorical representation of the Founder of the Christian religion was rendered pleasing to the eye of the new converts, and anything pertaining to the dreadful scene of the Crucifixion was avoided. The Christian Church was symbolized under the form of a ship, with our Lord as the pilot and the congregation as the passengers; whence we

may have the word *nave* (of a church), from *navis*, a ship; *naus*, a ship, was also the Greek name for the inner part of a temple.

The dove in Christian art is the emblem of fidelity and of the Holy Spirit, the pelican of the Atonement, and the phœnix of the Resurrection. One of the symbols of our Lord is a fish, because its Greek name

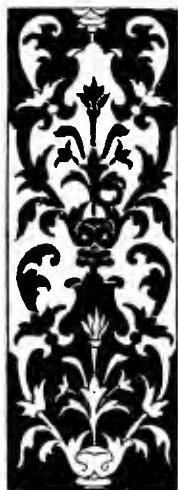


FIG. 171.—Counterchange ornament, Spanish embroidery.

Ἰχθύς (Ichthus) contains the initials of "Jesus Christ, the Son of God, the Saviour." It was also used as the symbol of a Christian passing through the world without being sullied by it, as the fish is sweet, in spite of its living in salt water; it is found engraved in the soft stone of the Roman catacombs (where the early Christians took refuge), with the monogram and other inscriptions. The *Vesica piscis*, or fish form, often encloses the Virgin and Child, and is the

common form of the seals of religious houses, abbeys, colleges, &c. The four evangelists are represented respectively as a lion, a calf, a man, and an eagle,—St. Mark being the lion, the calf St. Luke, the man St. Matthew, and the eagle St. John.

Many plants are used as symbols in Christian art: the vine, as typical of Christ, during Byzantine times

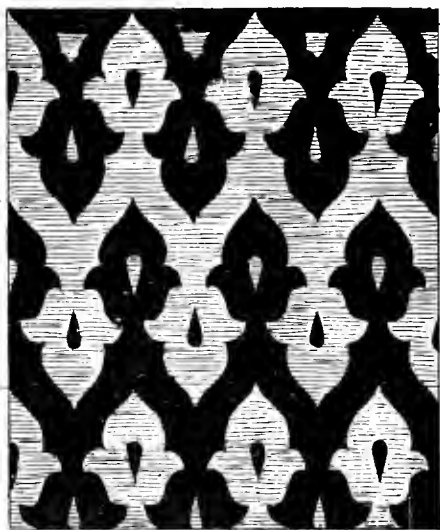


FIG. 172.—Moresque Counterchange pattern, inlaid marble.

and the Middle Ages. In Scripture we find frequent allusions to the vine and grapes; the wine-press is typical of the "Passion," as we read in Isaiah. The passion-flower, as its name denotes, was, and is, used as an emblem of the death of Christ. The lily is the emblem of purity, and has always

been used as the attribute of the Virgin Mary in pictures of the Annunciation. We find this plant often engraved on the tombs of early Christian virgins. From the iris, formerly called a lily, is derived the flower de luce, or *fleur-de-lis*, one of the finest conventional renderings of any flower; it was much used as a decoration in sculpture, painting, and weav-



FIGS. 173 and 174.—Interchange ornament.

ing during the thirteenth and following centuries. It was the royal insignia of France; mediæval Florence bore it on her shield and on her coin, the *florino*; and it was used in the crowns of many sovereigns, from King Solomon down to our own Queen. The trefoil is an emblem of the Trinity, and is a common form in Gothic decoration.

The symbolic and mnemonic classes have now been

described, and the *æsthetic* alone remains. *Æsthetic* form we owe to the clearness and directness of the Greek mind. The Greeks were contented with the simple solution of the problem before them, which was to beautify what they had in hand. If they wanted allegorical subjects they confined them to their figure subjects, and being thus freed from other disturbing elements, they concentrated their whole attention on perfecting floral form. They attained perfection in this as they did in their figures, by correcting the peculiarities of the individual by a study of the best specimens of a whole class; and thus succeeded in making the most perfect type of radiating ornament, and of adapting it to sculpture and painting, on flat and curved surfaces. This ornament has perfect fitness, for you can neither add to it nor take away from it without spoiling its perfection. The same may be said, only in a minor degree, of the colour applied to the carved patterns of the Saracens and Moors: they are both *æsthetic* works, solely created for their beauty. A symphony in music is a composition of harmonious sounds; it has little subject-matter, and is analogous to *æsthetic* ornament, only the ear is charmed by the former, as the eye is by the latter.

APPENDIX

ON THE ORDERS OF ARCHITECTURE

IT seemed to me that a short chapter on the orders would be useful to students, not only because so much ornament is used as an enrichment to architecture itself, but also because a very much larger proportion of it is used in conjunction with architecture, and without some slight knowledge of the subject, the ornament and the architecture, instead of setting off each other's characteristic beauties, are apt to spoil one another. The rigid lines of architecture should act as a foil to the graceful curves of ornament, and the plain faces should not only set off fretted surfaces, but make the undulations of carved ornament precious. When I speak of ornament, I include the highest form of it, the human figure, and I may point to the Doric frieze of the Greeks as a brilliant example of success. This conjunction of ornament and architecture, however, demands high qualities in the ornament, and insight in the artists as to what is wanted for mutual contrast or emphasis; and if this be successfully accomplished, I think it

must be conceded that the combined work gives a finer result than the uncombined excellence of each.

Mean ornament, whether of figures or plants, tends to degrade the architecture with which it is associated, and may spoil it by the main lines not properly contrasting with the adjacent architectural forms, or by the ornament being on too large a scale. I have seen in modern work, the stately dignity of a grand room utterly destroyed by colossal figures. Michelangelo, in his superb ceiling at the Sistine Chapel, has by use of gigantic figures dwarfed the vast chapel into a doll's house. I may add that there is monumental colouring as well as monumental form: the finest examples of such colouring may be seen in many of the grand buildings in Italy and at Constantinople, notably at St. Mark's and at Sta. Sophia; but you may also see magnificent halls and churches, coloured to look like French plum-boxes.

The elaborate system of proportioning parts to one another and to the whole, which is so important in architecture as to be its main characteristic, is equally valuable for the division of spaces for ornament.

Mouldings which form so great a feature in architecture as to have given rise to the saying that "mouldings are architecture," give lessons in elegance of shape, and in the proper contrast of forms, that are useful to the ornamentalist who has to design the shapes of small objects; while the Corinthian capital has been the prototype of most of the floral capitals up to the present day.

It is admitted that in those periods of history when architecture, sculpture, and painting attained their highest excellence, the painter, sculptor, and

architect have not only sympathized with one another, but each one has been no mean judge of the sister arts. At the Renaissance, and immediately before it, artists are to be found who were goldsmiths, sculptors, painters, and architects, and some few who were poets, musicians, and engineers as well.

The origin of the orders was probably in the verandah of the Greek wooden hut. In some of the paintings on the Greek vases may be seen the processes by which the Doric and Ionic capitals were evolved; but for our purpose, which is not archæology, only some of the best examples need be referred to, after the wooden hut had been converted into a marble temple.

An order consists of a column supporting an architrave, frieze, and cornice, which is called the entablature. The column generally consists of a shaft, a capital, and a base, except in the Doric columns of the Greeks and early Romans, which were baseless. The capital was the capping-piece which you now see put on the tops of story-posts by carpenters to shorten the bearing of the bressummer. The architrave was what we now call a bressummer, and bore the trusses of the roof; the fascias of the architrave show that in some instances this bressummer was composed of three balks of timber, each projecting slightly over the one below. The frieze was the wide band immediately above the architrave and below the cornice, comprising the triglyphs or ends of the trusses, and the filling in between them, which is called the metope. The metopes were left open in early Greek temples, but were eventually filled with sculpture. The cornice was the projecting boarded eaves; while the slanting

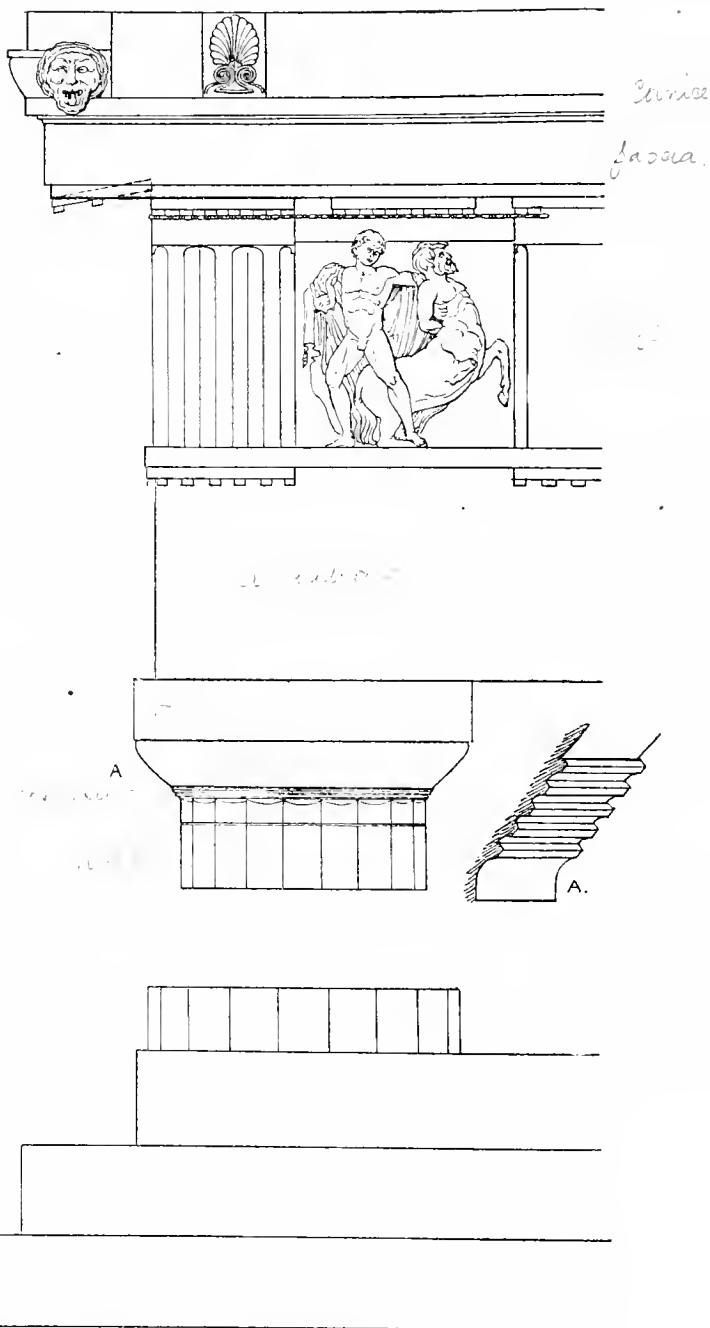


FIG. 175.—The Parthenon. Greek Doric ; enlarged section of annulets at A.

undersides of the mutules were copied from the slanting timbers of the roof.

I will speak first of the Greek orders, not only because they were the earliest, but because the Greeks showed the greatest artistic sensibility in their choice of forms, in the composition of lines, and in their arrangements for light and shade. I begin with the DORIC. The shaft is conical, and fluted with twenty shallow segmental flutes that finished under the capital, which consists of a thick square cap called the abacus, with a circular echinus under it, finished at the bottom with rings called annulets, and a little below them is a deep narrow sunk chase called the necking, and the shaft has no base.

The Greeks were a seafaring people, mainly inhabiting the sea-shore, the islands of the Archipelago, and the edges of Asia Minor, and were thus acquainted with the forms of the sea and of shells. The echinus of the Doric capital resembles the shell of the sea-urchin, or echinus, when it has lost its spines, and was probably called after it. The ovolo moulding that was most used was called the cyma or wave. At the Parthenon, the finest example of the Doric, the architrave is plain, and was once adorned with golden shields and inscriptions; it is capped by a square moulding called the tænia or band; the frieze, with its square cymatium, is capped with a carved astragal, and is divided longitudinally by the triglyphs, projecting pieces, ornamented with two whole and two half vertical channels, from which the word triglyph takes its name; below the tænia is a narrower square moulding the width of the triglyph, and beneath it, ornamented with drops called guttæ. I may point

to this as a most artistic device both to relieve the monotony of the *tænia* and to weld the architrave with the frieze. The triglyphs begin at the angles of the frieze, and range centrally over all the rest of the columns, with an additional triglyph between each, though in the frieze over the larger central opening of the Propylæum there are two intermediate triglyphs; the nearly-square metopes between the triglyphs are filled with figure-sculpture. The cornice consists of the square mutule band, from which the mutules project, whose slanting underside is enriched with drops; and above the mutules is their capping, a narrow fascia under the corona; the corona or main projecting member of the cornice is throated at the bottom, and its capping consists of a wide fillet, deeply-throated, with a hawk's-bill moulding under it. These together form the most superb piece of architectural work that exists, and has called forth the rapturous admiration of all the tasteful in the world, from the time it was built to the time of Ernest Renan, one of its latest distinguished admirers.

I have lingered over this order because it is a masterpiece for all time. Those who have seen it in England alone are possibly convinced that this praise has been ill-bestowed; yet even these would change their opinion if they saw it when perfectly white on a clear day in bright sunshine; but in London, even at its best, the clear air and fierce sun of Athens is wanting, as well as the pentelic marble, and the chances are that the sculpture in the metopes has been left out. This Doric of the Greeks is true architecture, fitted to the climate, and made by men of genius to charm the most gifted race the world has seen. To

the Greek architect no thought and no labour was too great in designing his building, to form it so that the sun would play melodies on it from dawn to dusk. Such truly national architecture cannot be imported into a different climate without losing most of its effect, nor can it be transferred to a coarse and opaque material without losing much of its charm ; while its sculpture, the finest the world has yet seen, portrayed national traditions or events connected with its faith. But even here in London, if you see paraphrases of Greek architecture just painted white on a clear sunshiny day, you will see a faint reflex of its pristine glory. The rising moon that the sun makes on the echinus, contrasted with soft graduated warm shades and sharp blue shadows, is the finest thing an architect has ever compassed. The splendid sculpture that adorned its metopes may be seen in the Elgin room of the British Museum. This one example is a model for those who seek perfection in exquisite simplicity, for almost all the mouldings are square ones, and there is no enrichment beyond the highest figure-sculpture, and one little carved astragal ; and I may add, that the perfection of the whole composition of the Temple is as great as that of this part.

THE IONIC.

The example, given on account of its simplicity, is from the Temple on the river Ilissus. The column differs from that of the Doric by being of slenderer proportions, by having twenty-four deep elliptical flutes with fillets in its shaft, by having a cushioned capital inserted between the thin moulded

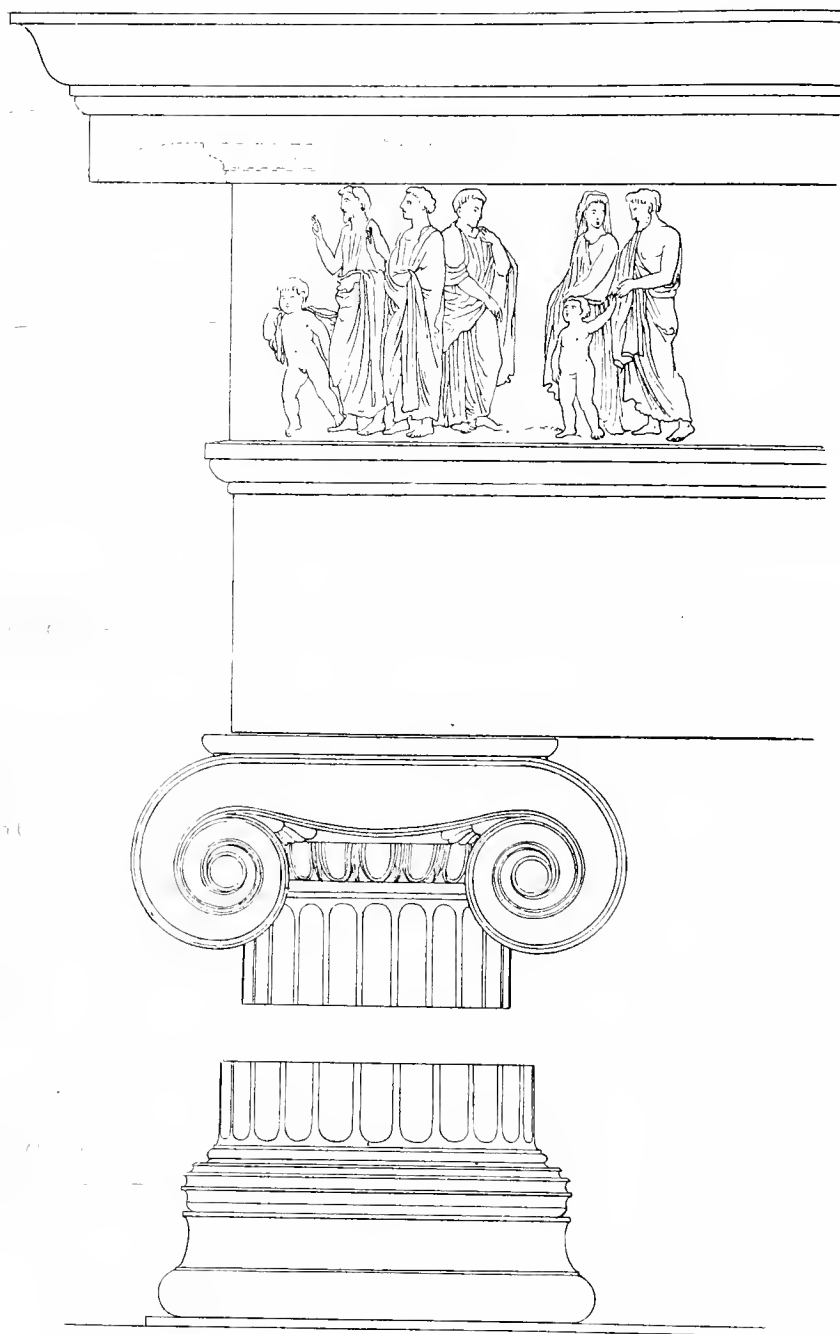


FIG. 176.—Entablature, capital and base of the Greek Ionic Temple on the Ilissus.

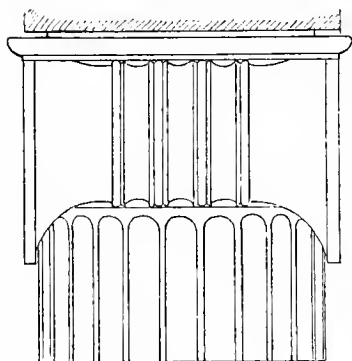
abacus, and a shallow echinus carved with the egg and tongue. The peculiarity of this cushioned cap is, that each side of the front and back faces are formed into volutes, and come down considerably below the bottom of the capital, and are carved on the faces with a shell spiral.¹ The junctions of the plain surfaces of the volutes with the projecting circular echinus are masked by a half honeysuckle. At the bottom of the shaft is a circular pedestal or base of slight projection, consisting of an upper and lower torus joined by a hollow (trochilus), the upper torus being horizontally fluted and the lower one plain, and there is no square plinth.

In this case the architrave is deep and without fascias, though the Ionic order has mostly three fascias; its capping (cymatium) consists of a fillet with a plain cyma and astragal beneath. The frieze, which has no triglyphs, is supposed to have been sculptured with figures; its cymatium consists of an ogee and astragal, to admit which the underside of the corona is deeply hollowed out; the cymatium of the corona consists of a narrow fillet and a cyma. The crowning member probably only existed on the raking sides of the pediment.

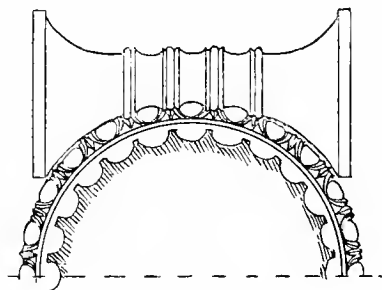
As this is not a treatise for architects, but a sketch of the subject for ornamentalists, one example is enough to show the difference between the Doric and Ionic, but the capital of the most ornate example, that of the Erechtheum, is given; its main differences from the former one being these, that the

¹ From Dr. Richter's discoveries at Cyprus, it seems probable that the Ionic volute may have taken its rise from an enlargement of the Egyptian lotus

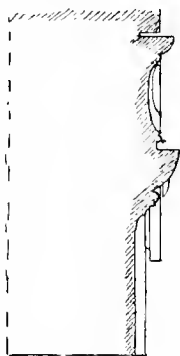
ornaments on the mouldings are carved instead of only being painted, that in the entablature there are three fascias to the architrave, that the column has



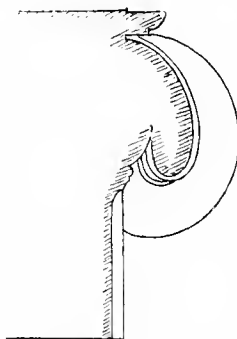
Side Elevation.



Plan.



Section.



Section.

FIG. 177.—Side elevation, plan, and section of the Ionic capital, from the Temple on the Ilissus.

a neck carved with floral ornaments and a carved necking, and the sweeps of the capital as well as the spirals of the volutes are more numerous.

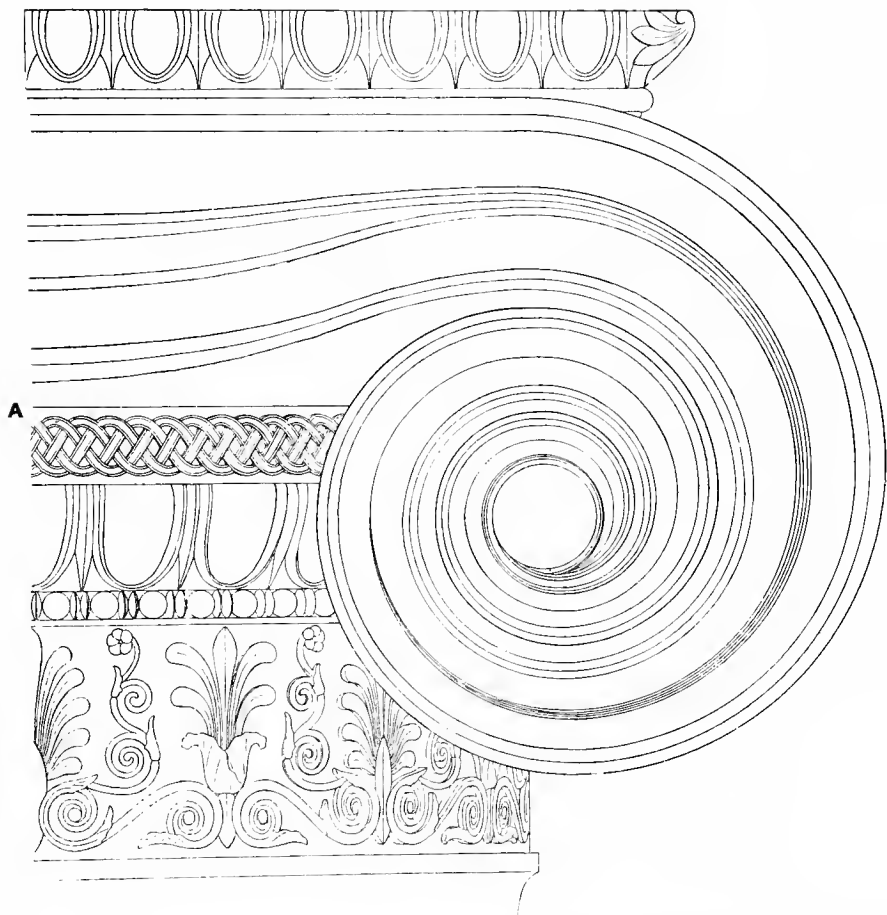


FIG. 178.—Greek Ionic; half of the Capital from the north portico of the Erechtheion at Athens. *A* is a regular guilloche with coloured glass beads in the eyes.

I have given too the capital of the internal Ionic columns of Apollo Epicurius at Bassæ, to show how much it is improved by making the top of the capital curved instead of straight. The Ionic is more graceful and as a rule more ornate than the Doric, but is not so majestic. Capitals from the

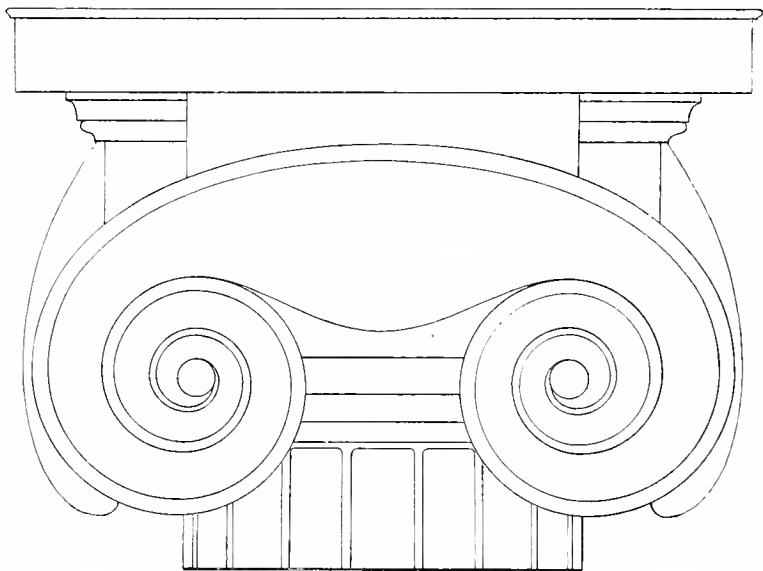


FIG. 179.—Capital from the Temple of Apollo Epicurius at Bassæ. Greek Ionic.

Erechtheum, from the Temple at Bassæ, from the last Temple of Diana at Ephesus, and from the Mausoleum are at the British Museum.

THE CORINTHIAN.

Callimachus, according to Vitruvius, invented this capital, and is supposed to have lived about 396 B.C.,

forty years before Alexander the Great was born. Besides the beauty of this order of the choragic monument of Lysikrates, it is the only undoubted and complete Greek specimen that we have in Europe. The main importance of the invention, besides its intrinsic beauty, is its being adopted by the Romans as their favourite order and used throughout their dominions. I give you here the story Vitruvius tells of its invention. Besides the prettiness of the story, it serves as an incitement to the reflection, that if those whose hand and eye are trained will only observe what they see, they may get notions for inventions.

“A marriageable maid, a citizen of Corinth, was taken ill and died. After her burial, her nurse gathered the things in which the maid most delighted when she was alive, put them into a basket, and carried them to the grave and put them on the top, and so that they might last the longer in the open air, covered them with a tile. By chance this basket was put on an acanthus root. The acanthus root meanwhile, pressed by the weight, put forth its leaves and shoots about spring time; these shoots growing against the sides of the basket, were forced to bend their tops by the weight of the corners of the tile and to make themselves into volutes. Then Callimachus, who from the elegance and subtlety of his sculpture was called Catatechnos by the Athenians, passing by that grave, noticed the basket and the tender growth of leaves round it, and charmed by the style and novelty of its form, made his columns among the Corinthians after that pattern.” (Vit. lib. 4, cap. i. pp. 9, 10.)

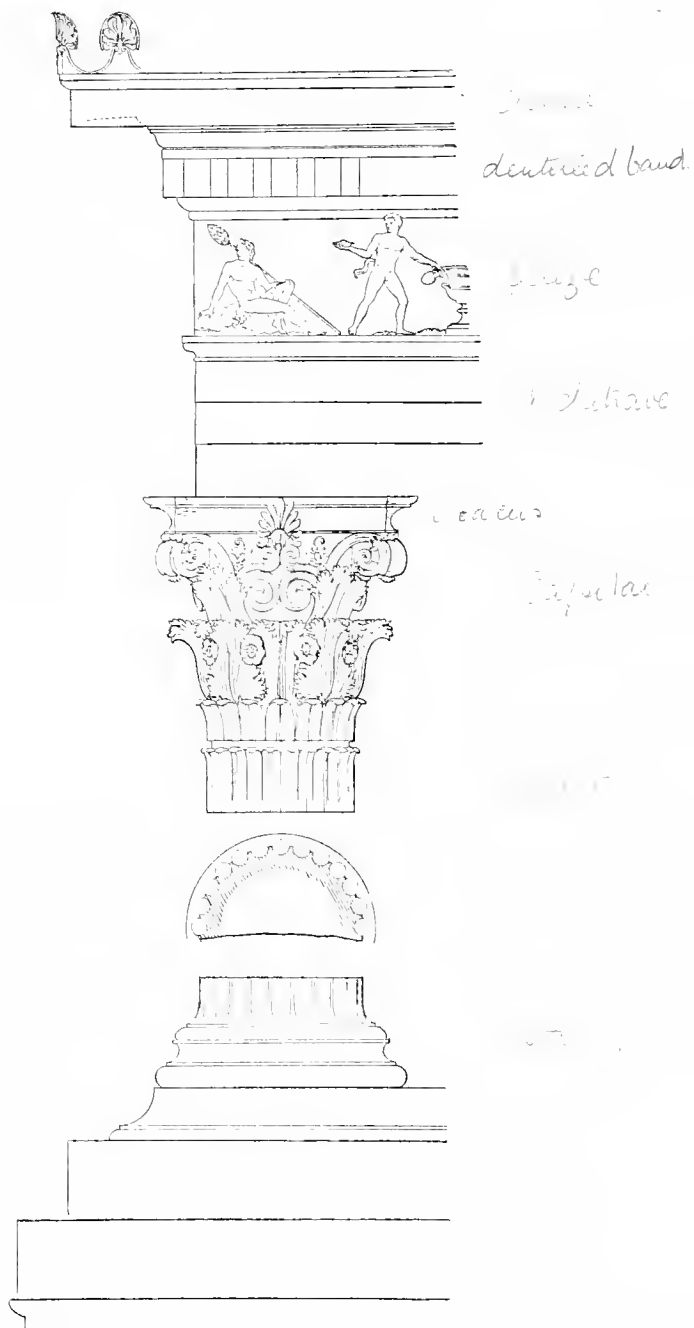


FIG. 180.—Entablature, capital and base of the Lysikrates monument. Greek Corinthian.

A Corinthian capital was found by Professor Cockrell in the Temple at Bassæ, supposed by him to have been used there. Another was found at Athens by Inwood, and there is a graceful capital of one of the engaged Corinthian columns at the Temple of Apollo Didymæus, at Branchidæ, near Miletus, of unknown date.

I do not look on work as Greek that was done after the second century B.C., when Greece became a Roman province.

The Corinthian capital of the monument of Lysikrates is more than one and a half times as high as the lower diameter of the column, while the Doric capital of the Parthenon is only about half a diameter to the necking, and the Ionic capital of the Erechtheum about eight-tenths.

The abacus of the capital is deep and moulded, is hollowed out horizontally on the four sides in plan, and has the sharp angles of the abacus cut off. The floral cap consists of a bottom range of sixteen plain water leaves, about half the height of the eight acanthus leaves of the upper row; these have a blossom between each pair of leaves.

Above the top, and at the sides of the centre leaf, on each of the four sides of the capital, spring two acanthus sheaths, out of each sheath spring three cauliculi; the one most distant from the centre forms a volute under one side of the angle of the abacus, and is supported by the turned-over top leaf of the sheath; the lowest cauliculi form two volutes touching one another at the centre. The third cauliculus comes from between the two former, and forms much smaller volutes than those immediately below them, touching

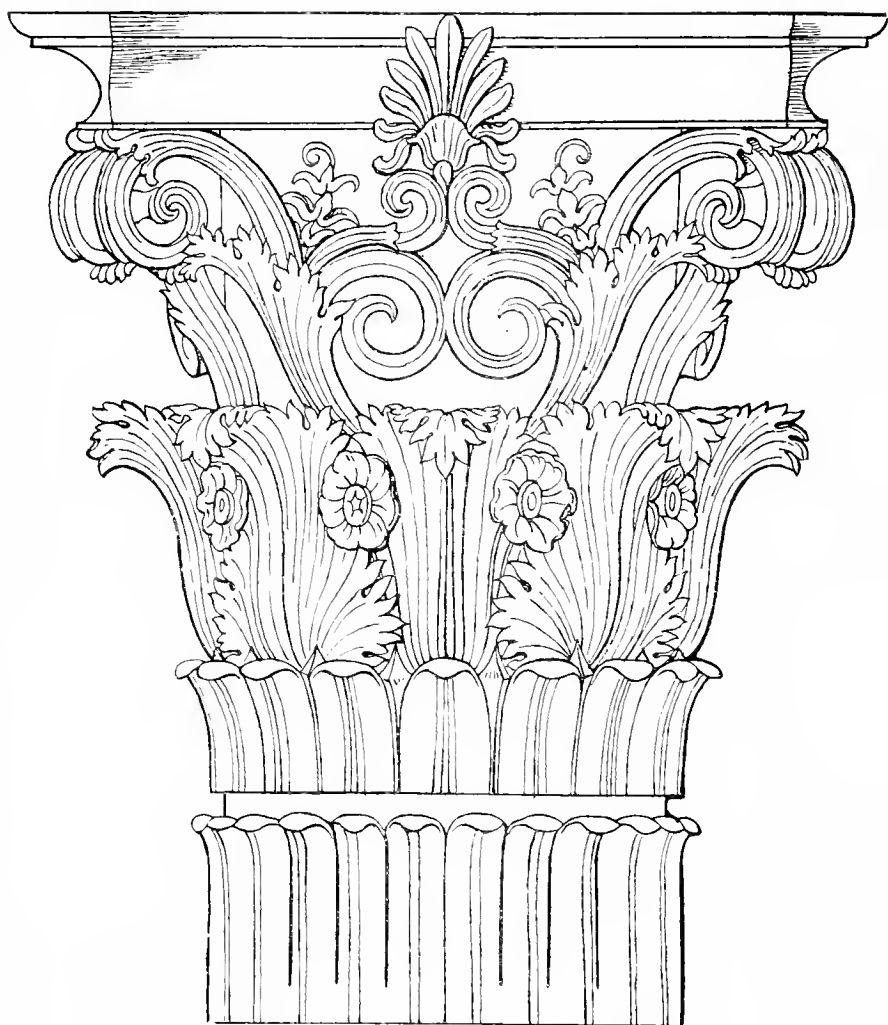


FIG. 181.—Capital of the Lysikrates monument. Greek Corinthian.

at the centre, but turning the reverse way to those beneath ; from the middle of these springs a honeysuckle, whose top is as high as the top of the abacus, and there is a little floral sprig between the angle volutes and the honeysuckle, to relieve the bareness of the basket or bell. The foliage of this capital is exquisitely graceful, but the outline of the capital is not happy. The entablature is Ionic, to leave the frieze clear for the sculptured history of Bacchus, turning some pirates into dolphins. The architrave is deep with three equal fascias, the face of each one inclined inwards, and a cymatium. Above the cymatium of the frieze is a cornice with a heavy dentilled bed mould.

The Greeks were consummate artists, who bore in mind the adage that "rules are good for those who can do without them," and adapted every part of their buildings to produce the effect of light and shade they wanted. The profiles of their mouldings were mostly slightly different in every example we have, and mostly approximate to conic sections, so as to have the shade less uniform, segments of circles being rarely used ; and there was in Athens an affluence of excellent figure sculptors.

It has always seemed to me that the slight variations the Greeks made in their profiles to get perfection, and their passion for simplicity, were greatly due to their intimate knowledge of the nude human figure. All their recruits were exercised naked, and they must have noticed that the perfecting of the human shape by training was brought about by slight variations.

THE ROMAN ORDERS.

The Romans, great people as they were in sub-

jugating, governing, and civilizing so great a portion of the world, and possibly on that very account, were

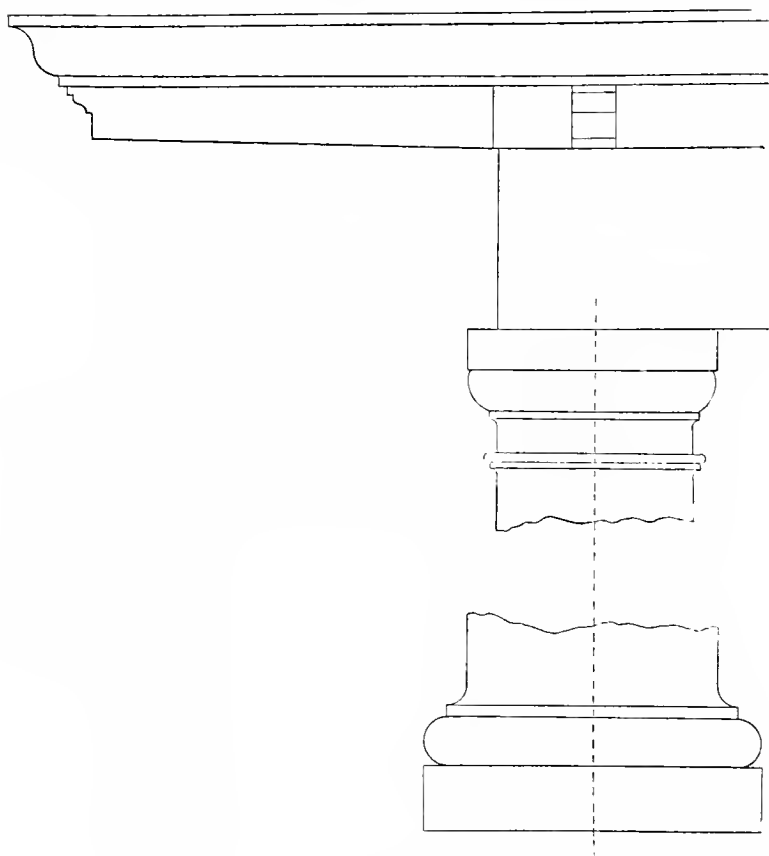


FIG. 182.—The Tuscan order.

not artistic in the sense that the Greeks were. The Romans were slaves to easy rules and methods; most,

if not all, the profiles of their mouldings were struck with compasses, and they were almost destitute of good figure sculptors. They had, however, a passion for magnificence, and for ornate stateliness and dignity, and they rarely failed to get these in their public monuments.

Besides the three orders which were taken from the debased Greek examples of their own time, the Romans added two, the order of the *Tuscans*, and an invention of their own called the *Composite*.

THE TUSCAN.

The Tuscan is described by Vitruvius, lib. 4, cap. 7, as an incomplete Doric, but with a base and a round plinth. The portico of St. Paul's, Covent Garden, by Inigo Jones, is the best example we have of it in London. The example given is from the learned Newton Vitruvius.

THE ROMAN DORIC.

One of the earliest examples, with the exception of that at Cora, which is rather debased Greek than Roman, is the example on the Theatre of Marcellus at Rome, finished by Augustus. The column is not fluted, and has no base, and the capital has been greatly altered from that of the best Greek examples. The abacus has a cymatium ; the echinus has been reduced in depth, and is an ovolo, and the annulets are merely three plain fillets ; the column too has a neck and a necking. In the entablature the architrave is

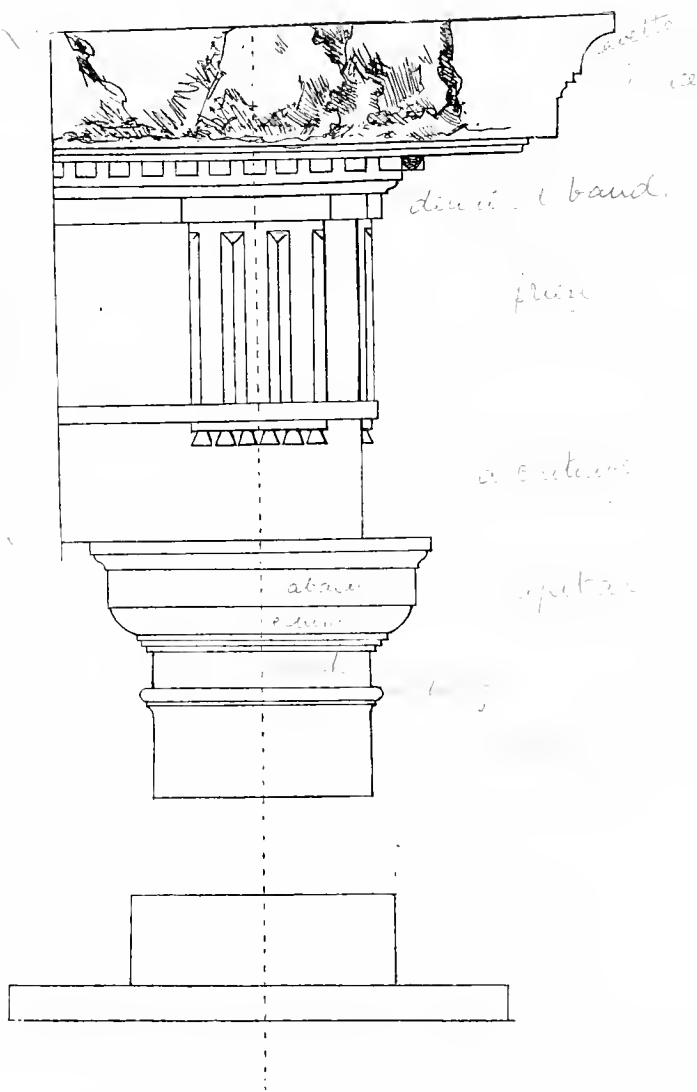


FIG. 183.—Roman Doric. From the Theatre of Marcellus.
 The crowning members of the cornice are conjectural, for the whole has been broken away
 See Desgodetz.

shallower than in the Greek examples. In the frieze the triglyphs are over the centres of the angle columns; the guttæ are the frustums of cones, while those of the Greeks were cylinders or with hollowed sides; the cornice has a dentilled bed mould; and the mutules have disappeared, but their edge runs through and the soffit is slanting, and ornamented alternately with coffers and small guttæ, six on face and three deep; and besides, the cymatium of the corona is capped by a large cavetto; this in the Greek examples was only the crowning member of the slanting sides of the pediment. There are Roman Doric columns at the Colosseum, at Diocletian's Baths at Rome, and elsewhere. The Doric, best known to us, was elaborated by the Italian architects of the Renaissance.

THE ROMAN IONIC.

The Ionic was not much more to the taste of the Romans than the Doric, for, with the exception of the examples in tall buildings, where the orders were piled up one over the other, the Temple of Fortuna Virilis is the only good example, although there is a very debased one at the Temple of Concord. The columns of the Temple of Fortuna Virilis somewhat resemble the Greco-Roman ones of the Temple of Bacchus at Teos; they have similar paltry capitals, and an Attic base, but their truly Roman entablature is very notably worse than that at Teos, in fact, it might be used as an example of what to avoid in profiling. The cornice is crushingly heavy for the frieze and architrave, the parts are disproportionate, the corona having almost disappeared to make room for the

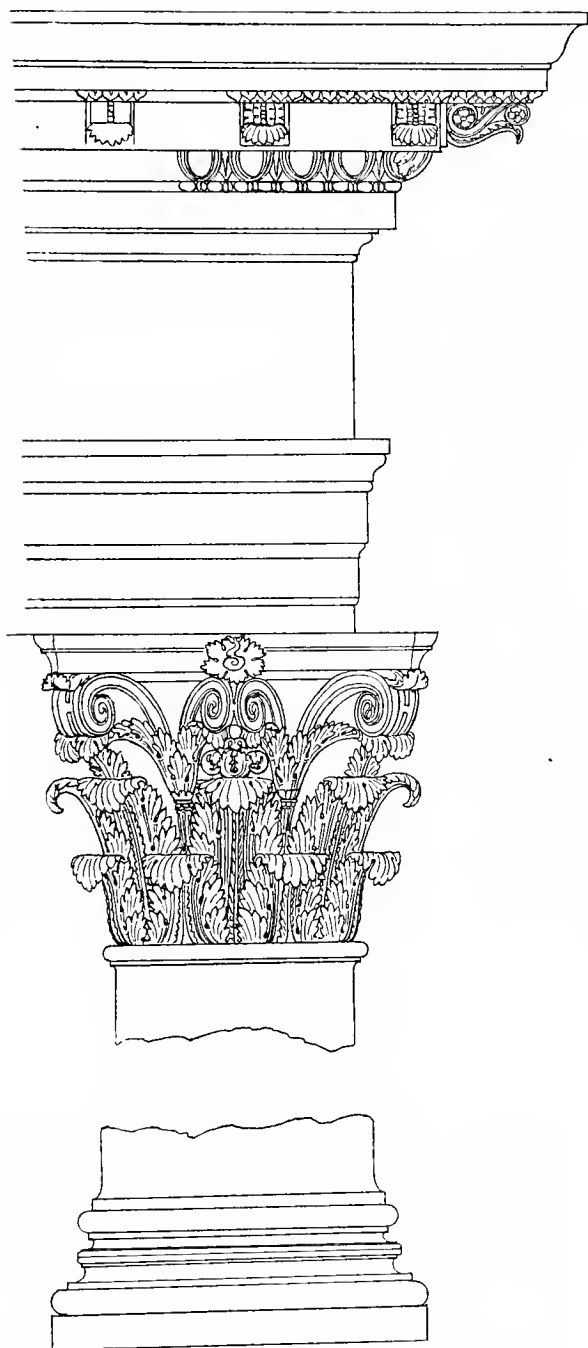


FIG. 185.—Roman Corinthian. Entablature, capital, and base of the Pantheon.

extra crowning member, and the floral ornaments on some of the mouldings are gigantic. Its main importance to us is from the use made of it by the Renaissance architects, some of whom, however, greatly improved its appearance, by making it a four-faced capital, by adding a necking and putting festoons from the eyes, thus giving the capital greater depth and importance.

THE ROMAN CORINTHIAN.

The magnificence of this capital took the Romans, so that good examples of the other orders, except of the Composite, are rare. As I said before, the only undoubted Greek Corinthian order that has come down to us is that of the Lysikrates monument, though we have many Greco-Roman examples. The best Roman example I can give you is that of the Pantheon; the existing portico is believed by M. Chedanne to be a copy of Agrippa's, made in the days of Septimius Severus. At any rate, it has the comparative simplicity that characterized some of the buildings just before our era. The capital has two rows of eight leaves, the upper row not rising to quite so great a height above the lower ones as these do above the necking, and there is space between the upper leaves to show the stalks of the sheaths of the cauliculi; the inner ones finish under the rim of the basket, the outer ones form the volutes under the angles of the abacus, and above these a curled leaf masks the overhanging of the angles of the abacus. From some foliage on the top of the upper

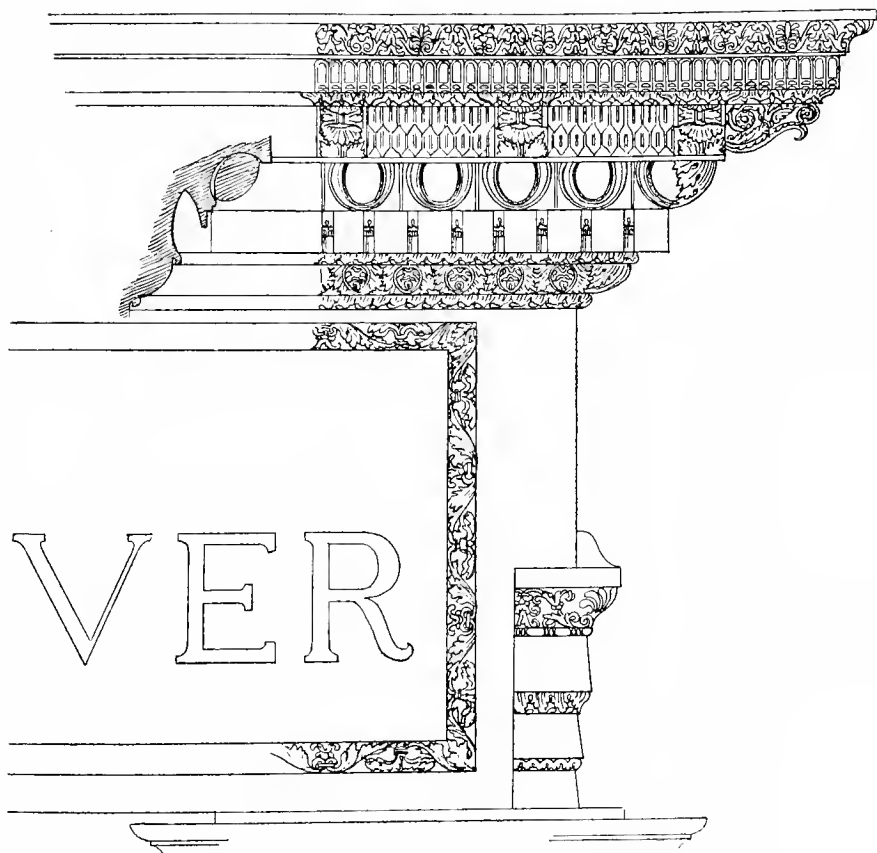


FIG. 186.—Roman Corinthian. Entablature of Jupiter Tonans.

middle leaf, a stalk runs up behind the cauliculi, and blossoms in the abacus.

It may be observed that the cauliculi of the centre and of the volute have lost the floral character and become stony. The shafts are unfluted, being of granite, and have the favourite Roman base, a plain upper and a lower torus, with two scotias separated by double astragals and fillets. The entablature consists of an architrave of three fascias, the bottom edge of whose projections are moulded, the whole architrave is capped with a cymatium consisting of a wide fillet and an ogee with an astragal beneath. The frieze is slightly shallower than the architrave, and has nothing on it but the inscription, and its cymatium is the counterpart of that of the architrave on a smaller scale. The cornice is heavy, and its bed mould consists of an uncut dentil band, an ovolo carved with the egg and tongue, and an astragal carved with the bead and reel, a modilion band with carved modillions, a shallow corona, and a deep cyma-recta-cymatium with fillets.

I have added the fine and gigantic capital of Mars Ultor and the entablature of Jupiter Tonans, which is overladen with ornament, as a contrast to the almost stern simplicity of that of the Pantheon.

I shall only draw your attention to two points in this ornamentation, the omission of the tongues between the eggs, leaving only the upright line, and the attempt to turn the egg and tongue into a foliated form. The egg itself is covered with ornament, and is set in the centre of acanthus leaves. We must praise the boldness of the author, who has given us

a new ornament, but deplore his want of tasteful invention which has forced him to give a bad one.

The varieties of leaves used in capitals have been mentioned in the body of the book.

THE ROMAN COMPOSITE.

This order has been called the Composite, from the mixture of Ionic and Corinthian motives in its capital. The example given is from the Arch of Titus, erected to celebrate the taking of Jerusalem in 70 A.D. The main thing to be remarked is the capital; for the entablature is Corinthian, less ornate than that of Jupiter Tonans or Jupiter Stator, and very inferior to the latter in its proportions. It may be imagined that all the foliage above the upper row of leaves in a Corinthian capital has been removed, that a carved Ionic echinus has been put in at the level of the bottom of the Corinthian cauliculi, that on the centre of the echinus there is a calix, from which a flower runs up above the top of the abacus, and from each side of the calix spring curved bands running into the hollow of the abacus and ending in heavy volutes coming down to the tops of the upper row of leaves, the lower parts of the bands and the spaces between the spirals being filled with foliage. The parts of the bell thus left bare by the omission of the sheaths of the cauliculi have two little scrolls of foliage to cover them. The worst fault of the capital is, that the upper part has no artistic connection with the lower, and taken merely as an isolated capital, its volutes are too ponderous for the rest. We must, however, give the Romans credit for the merits of the invention. They

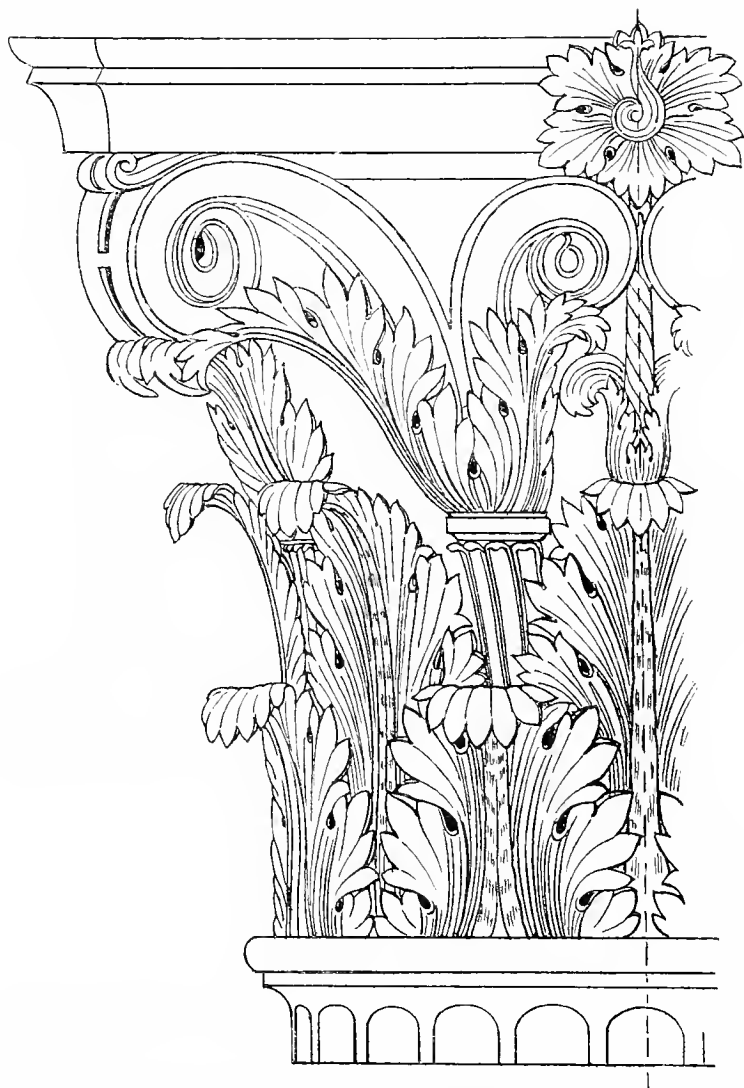


FIG. 137.—Roman Corinthian. Half of the capital of Mars Ultor.

saw that in tall columns, and in this case the columns are on pedestals, the volutes of Corinthian columns

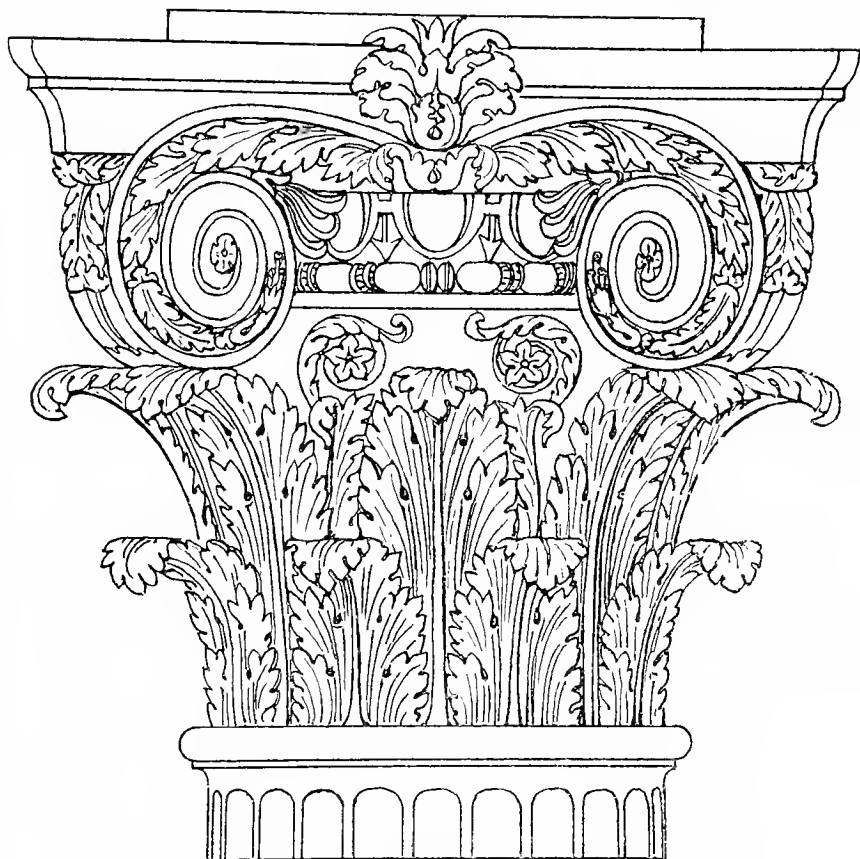


FIG. 182.—Roman composite capital from the Arch of Titus.

were too insignificant. This capital when once invented took the Romans, and was applied everywhere.

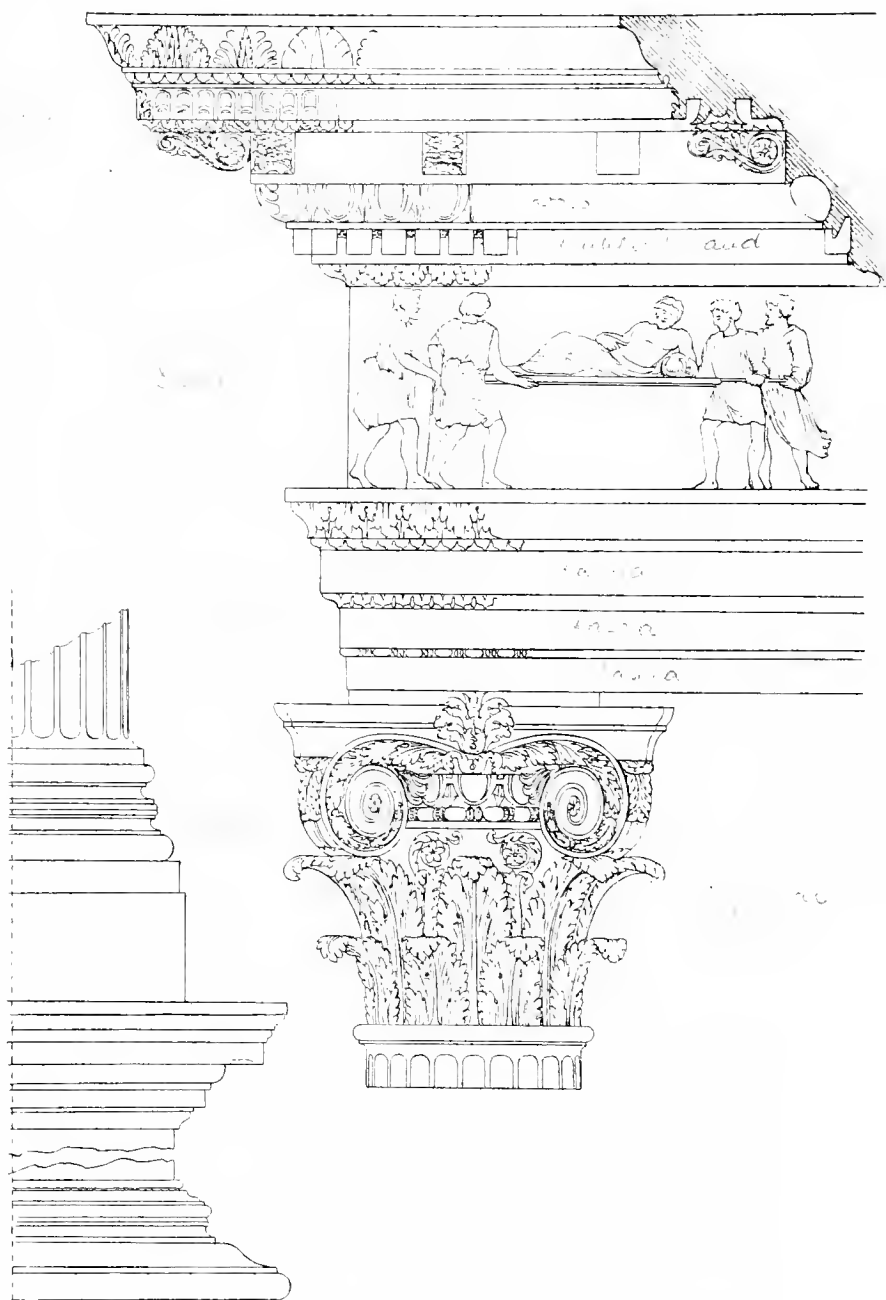


FIG. 189.—Roman Composite. Entablature, capital, and base, Arch of Titus.

It was the practical solution for a practical people of a want that was felt. Artistically speaking, it was no solution, and we can imagine that if such a solution had been offered to the Athenians in their palmy days, the author would have been howled at, and hunted out of the city.

I may mention that the orders that have passed through the hands of the Italian masters and been altered by them are not Classical, but Renaissance.

Those who wish to study this subject will find the Greek examples in Stuart and Rivett's *Antiquities of Athens*; in Mr. Penrose's *Principles of Athenian Architecture*; in the books published by the Dilettanti Society; in Cockerell's *Temple of Jupiter Panhellenius at Ægina*; in Inwood's *Erectheion*; and in Wilkins' *Antiquities of Magna Græcia*. J. Pennethorne's *Elements and Mathematical Principles of the Greek Architects* gives many examples of profiles: "The Roman," in *Les Édifices Antiques de Rome*, by Desgodetz; Cresy and Taylor's *Architectural Antiquities of Rome*; Normand's *Parallel of the Orders*; and Mr. Phené Spiers' *Orders of Architecture*.

A CHAPTER ON THE CONSTRUCTION OF SOME FIGURES AND CURVES IN PRAC- TICAL PLANE GEOMETRY USEFUL IN ORNAMENT.

DEFINITIONS and names of figures from 1 to 13.

An Equilateral triangle is a triangle which has *three equal* sides. (Fig. 1.)

An Isosceles triangle is that which has only two sides equal. (Fig. 2.)

A Scalene triangle is that which has *three unequal* sides. (Fig. 3.)

A Right-angled triangle is that which has a right angle. (Fig. 4.)

An Acute-angled triangle is that which has *three* acute angles. (Fig. 5.)

A Parallelogram is a four-sided figure which has its opposite sides parallel. (Fig. 6.)

A Rhombus is a *four-sided* figure which has all its sides equal, but its angles are not right angles. (Fig. 7.)

A Lozenge is a square set angle-wise. (Fig. 8.)

NOTE.—A square, an oblong, a rhombus, and a rhomboid are all species of parallelograms.



FIG. 1



FIG. 2

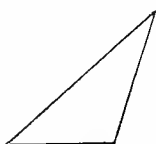


FIG. 3

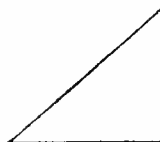


FIG. 4



FIG. 5



FIG. 6

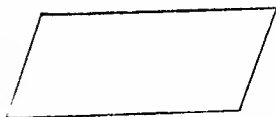


FIG. 7

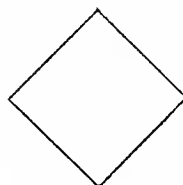


FIG. 8

A Diamond is composed of two *equilateral* triangles set back to back. (Fig. 9.)

All other four-sided figures are called Trapeziums. If one opposite pair of sides be parallel, and the other pair not, the figure is called a Trapezoid. (Fig. 10.)

Polygons.—A Polygon is a plane rectilineal figure contained by more than four straight lines.

A Regular Polygon is that which has its sides *equal*, and its angles also are *equal*.

An Irregular Polygon may have *unequal* sides and *unequal* angles, or *unequal* sides and *equal* angles, or *equal* sides and *unequal* angles. In this chapter regular polygons are only treated of.

Polygons are named according to the number of sides or angles they may have. A polygon having

5 sides is a Pentagon.	13 sides is a Tridecagon.
6 „ a Hexagon.	14 „ a Tetradecagon.
7 „ a Heptagon.	15 „ a Pentadecagon.
8 „ an Octagon.	16 „ a Hexadecagon.
9 „ a Nonagon.	17 „ a Heptadecagon.
10 „ a Decagon.	18 „ an Octadecagon.
11 „ an Undecagon.	19 „ a Nonodecagon.
12 „ a Dodecagon.	20 „ a Bisdecagon.

Figs. 11, 12, and 13 are self-explanatory.

Fig. 14. From a given point D without to draw Tangents to a given circle A B C.

Join D E the centre of the circle C.

Bisect D E in F. With F as centre and F E radius describe the circle D B E cutting the given circle in A and B. Draw the required tangents from D to touch the given circle at A and B. N.B.—A tangent to a circle or arc is always at right angles to a radius drawn to the point of contact.

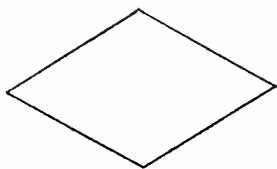


FIG. 9

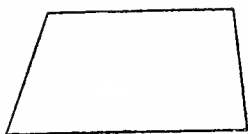


FIG. 10

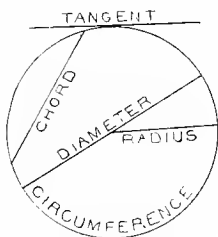


FIG. 11



FIGS. 12 and 13

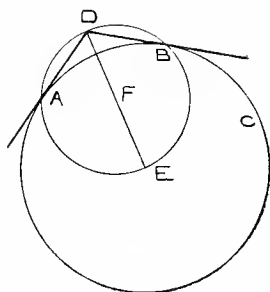


FIG. 14

Fig. 15. To draw an Exterior Tangent to two given circles A B and C D K.

Join the centres E and F cutting the circumference of the larger circle at K. Bisect E F in G. From K in the line K F cut off a part K P equal to the radius of the smaller circle E B.

With centre G and radius K F describe a semicircle ; with F as centre and radius F P describe a circle. The semicircle cuts this circle at H. Join F H, and produce it to C. At E draw E A parallel to F C. Join A C, which is the exterior tangent required.

Fig. 16. To draw an Interior Tangent to two given circles B E and F D.

Join the centres E and F. Bisect E F in G, and describe a semicircle on E F. From K on the larger circle mark off K J and E F equal to the radius of the smaller circle, and with F as centre and F J as radius describe an arc passing through semicircle at H. Join F H cutting the larger circle at C, and draw E A parallel to F H. The points of contact are A and C, through which the *interior* tangent is drawn.

Fig. 17. Within a given circle to describe *any* Regular Polygon—say a Pentagon.

Draw the diameter A F and divide it into the same number of parts as the required polygon is to have sides—in this case it will be five parts. To divide the diameter into the number of equal parts, draw a line A X any angle to A F. Set off any convenient measurement five times on this line. Join point 5 to F, and draw the lines 4, 4', 3, 3', &c., parallel to 5 F to meet the diameter. With A and F as centre and A F as radius describe arcs intersecting at L. From

L draw a line through the *Second* division on A F at point 2' cutting the circumference at B. Join A B. This is the length of the side of the required polygon. Set off the length of the side A B around the circumference at C, D, and E. Join the points A, B, C, D, E to complete the required *pentagon*.

N.B.—A Regular Hexagon may be inscribed in a circle by setting off the length of its radius *six* times round the circumference, and joining the points.

Fig. 18. On a given line to construct *any* Regular Polygon,—say a Pentagon.

Produce the given line A B to R, and with B as centre and A B as radius describe a semicircle A C R. Divide the semicircle into as many parts as the polygon is to have sides—in this case five. Draw a line from point B to the *second* division point Q C. Bisect A B and B C to find P, which will be the centre of a circle passing through the points A B C. Mark off the points D and E, making the distances C D, D E, and E A each equal to A B. Join C D, D E, and E A to complete the required polygon.

Fig. 19. Special method of drawing an Octagon in a given circle.

Draw two diameters B F and H D at right angles to each other. Bisect angles H K B and B K D in the lines K A and K C. Produce the lines K A, K C, to meet the circumference at G and E. The *eight* points thus found on the circumference are joined to make the required octagon.

Fig. 20. To inscribe an Octagon in a given square.

With each corner of the square as centres, and half the diagonal of the square as radius, describe arcs

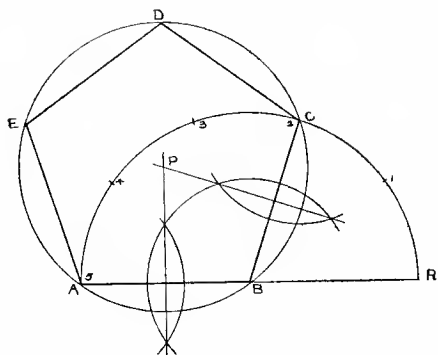


FIG. 18

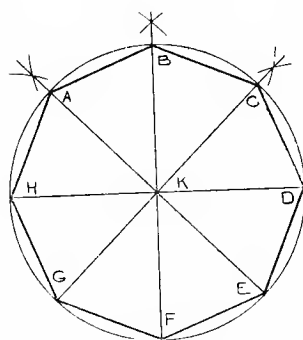


FIG. 19

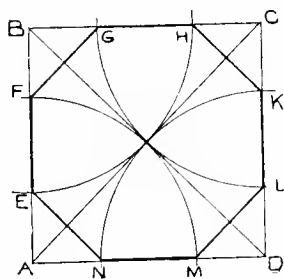


FIG. 20

cutting the sides of the square at F, G, H, K, &c. Join these points to complete the required octagon.

Fig. 21. To describe a circle to touch two given straight lines A B and A C, one point of contact being given.

Bisect the angle B A C in A D. At C draw a perpendicular to A C, meeting A D at D. With D as centre and D C as radius describe the required circle.

Fig. 22. To inscribe a *circle* in a given triangle A B C.

Bisect any two of the angles as at B and C. The lines of bisection intersect at D. Produce B D to E. With centre D and distance D E inscribe the required circle.

Fig. 23. A square being given, to inscribe *four equal circles* each touching *two* others and *two* sides of the square.

Draw the diagonals and two lines parallel to the sides through the centre of the given square. Join the extremities of the latter lines to obtain the points 1, 2, 3, and 4. With these points as centres, and 1 E drawn perpendicular to C A as radius, inscribe the four required circles.

Fig. 24. A square being given, to inscribe *four equal circles* each touching *two* other and *one* side of the square.

Draw the diagonals and two lines through the centre parallel to the sides of the given square A B C D. Bisect any one of the angles made by a diagonal and one of the sides of the square, as at D. Produce the line of bisection until it meets the vertical centre line at point 1. With the central point O as centre

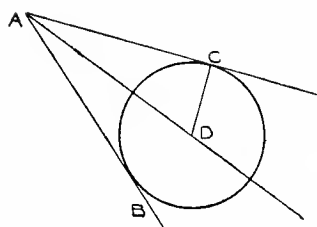


FIG. 21

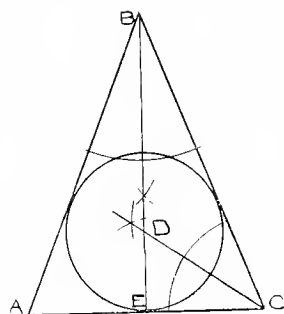


FIG. 22

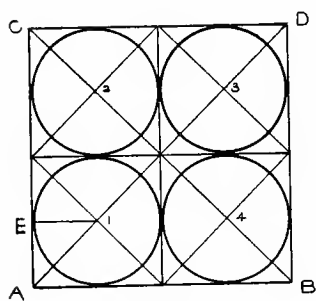


FIG. 23

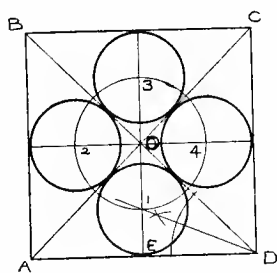


FIG. 24

and O 1 as radius, describe a circle to obtain the points 1, 2, 3, 4. These are the centres of the required circles.

N.B.—If the central portion made by the meeting of the four circles were removed, the remaining parts of the circles would form a figure known as the *quatrefoil*, a form common in architecture.

Fig. 25. To inscribe *six equal circles* in a given equilateral triangle A B C.

Bisect the angles of the given equilateral triangle as at E, and draw the bisection lines through to meet the centre of each side. Bisect the angle A B J to obtain the point D on C K. Through D draw G F parallel to A B, also F H and H G parallel to the sides of the triangle. With D as centre and D K as radius inscribe one of the required circles, and with the same radius and F, 2, H, 1, and G as centres inscribe the remaining circles.

Fig. 26. (1) Within a given circle to inscribe a *hexagon*. (2) Without the same circle to describe a *hexagon*. (3) Within the inner hexagon to inscribe *three equal circles* each touching each other and two sides of the hexagon.

(1) Mark off the length of the radius of the given circle B D F six times on the circumference as at D E F, &c. Draw the three diameters A D, B E, and G F, and produce them a little beyond these points. Join the points G, D, E, F, &c., by straight lines to produce the hexagon within the given circle. (2) Bisect the angle K O H, the line of bisection will cut the circle at point R. Through R draw H K parallel to B C. With O as centre and O H as radius describe a circle cutting the produced diameters at K, L, M, &c.

Join the latter points to produce the required hexagon without the given circle. (3) Join the points G, E, A. This will obtain the points 1, 2, 3 on the diameters. Draw 1, 4 perpendicular to G B. With 1, 4 as radius and 1 as centre describe one of the required circles. 3 and 2 are the centres of the other two required circles.

Fig. 27. Within a given circle to inscribe any number of *equal circles*, each touching the circumference and two other circles.

Divide the circle in the same number of parts as the number of circles required—in this case five. Draw the five radii. Bisect the angles B D A and A D C. Draw E F perpendicular to D A. D E F is a triangle any two angles of which bisect as at D and E. From point 1 thus obtained on D A and radius 1 A inscribe a circle. From D as centre and D 1 as radius describe a circle cutting the five radii in points 1, 2, 3, 4, 5. With the latter points as centres and 1 A as radius describe the remaining required circles.

Fig. 28. This problem is worked in the same manner as Fig. 27, *seven* circles being inscribed instead of *five* in a given circle.

Fig. 29. To inscribe a *trefoil*, or *three equal* semi-circles having adjacent diameters in a given circle.

Divide the given circle into six equal parts by marking off the length of the radius six times on the circumference. From the centre D to these six points draw radii. Bisect any of the six sectors as at E. Draw E C obtaining F on one of the radials. On either side of F draw lines from it to meet the alternate radials perpendicular to B D and D C, and

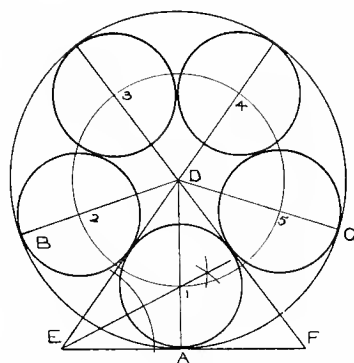


FIG. 27

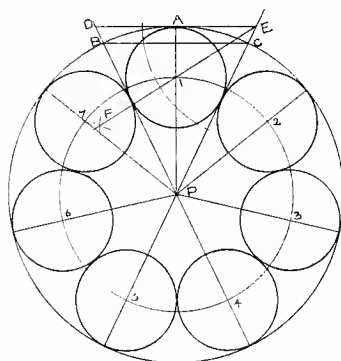


FIG. 28

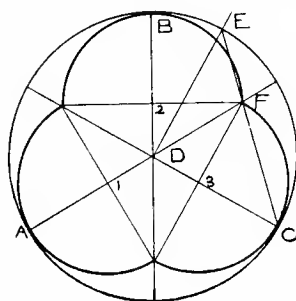


FIG. 29

join their extremities, thus making the equilateral triangle 1, 2, 3. On the sides of this triangle describe the three semicircles required by using points 1, 2, and 3 as centres, and 2 F as radius. The completed figure is the trefoil, and the inscribed three semicircles have their diameters adjacent.

Fig. 30. To describe an equilateral triangle within and without a given circle.

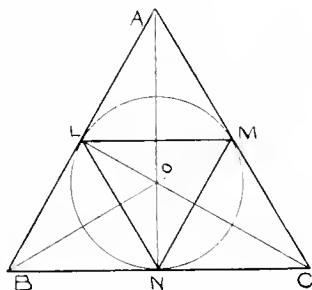


FIG. 30

Draw six radii dividing the given circle into six equal parts. Join their alternate extremities as at L M N. This makes the required *equilateral* triangle within the circle. Draw tangents to the circle at L M and N, or lines at right angles to L O, M O, and N O. Produce the latter radii to meet the tangents at A B C. A B C is the *equilateral* triangle without the circle.

N.B.—It will be seen that the triangle B A C is made up of four similar triangles each equal to L M N. Also, if six of the smaller triangles, as A L M, were placed around points A B and C a hexagon would be formed. This figure is very useful in designing geometrical and other repeating *all over* patterns in ornament.

CONIC SECTIONS.

The figures known as the Conic Sections are the Ellipse, the Parabola, and the Hyperbola.

The Cone may have other sections in addition to these, such as the section through any point below the apex, on the axis, and taken parallel to the base ; this would be a *circle*, and a section through the apex perpendicular to the base would be an *isosceles triangle*.

The Ellipse is the curve of the section made by a plane passing *obliquely* through a cone from side to side.

The Parabola is the curve of the section made by a plane passing through a cone *parallel* to one of its sides.

The Hyperbola is the curve of a section made by a plane passing through a cone *parallel* to its *axis*, or *inclined* at a greater angle to its base than its side, but *not* through its apex.

Fig. 31. The elevation of a cone is shown at A B C. A section through point X at right angles to the axis of the cone is a *Circle*. A section passing through and across the cone from point X, but not at right angles to the axis, is an *Ellipse*, as at X 1. A section through X parallel to the opposite side A C is a Parabola, as at X 2. A section through X parallel to the axis, as at X 3, or a section through X at any other angle greater than the angle made by the side and base, as at X 4, is a Hyperbola.

Figs. 32, 33, and 34 show the actual shape of the sections X 1, X 2, and X 3 respectively.

Fig. 32. In this figure the *major* or *transverse* axis of the Ellipse is equal to X 1. To find the *minor* or *conjugate* axis bisect X 1 (Fig. 31) in H, draw through it F G parallel to A B, drop a perpendicular from F to *f*, and describe the semicircle *f h g*. From H drop a perpendicular to A B, and produce it to *h* to meet the semicircle, *h h* is then half the length of the minor axis of the Ellipse, as C D. Divide A E into any number of equal parts, and A G into the same number. Draw from C lines through the divisions as 1, 2, 3 &c., and from D lines to 1' 2' 3' &c. The curve of the required Ellipse will pass through the intersections of these lines, as at 1'' 3'' 5'' &c.

Fig. 33. In this figure, the Parabola, the line C D is equal to X 2 (Fig. 31), while A B is *twice* the length of D 2 (Fig. 31). Divide G B into any number of equal parts, and join the points of the divisions to C. Divide D B into the same number of equal parts, and draw lines from the points of division parallel to D C to meet the similar numbered lines drawn from B G; through these meeting points the curve of the Parabola will be drawn.

Fig. 34. The only difference between the working of this figure—the Hyperbola—and the Parabola is that the lines which in the Parabola were drawn parallel to G B, are here drawn to a point E on C D produced, C D being equal to X 3 (Fig. 31). This point E is found by drawing the line from 7 on D B to E on C D produced, where C E equals twice X O (Fig. 31).

Fig. 35. To describe an Archimedean spiral of any number of revolutions—say *three*, the longest radius A B being given.

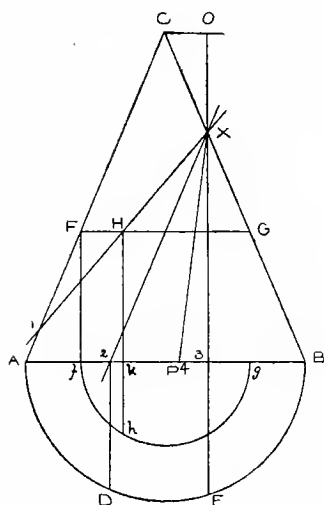


FIG. 31

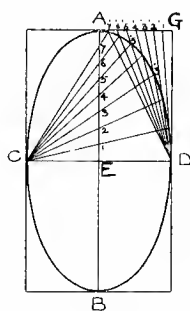


FIG. 32

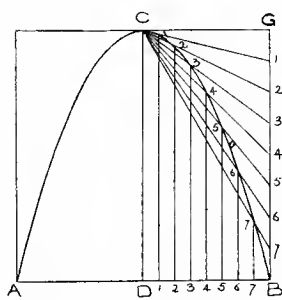


FIG. 33

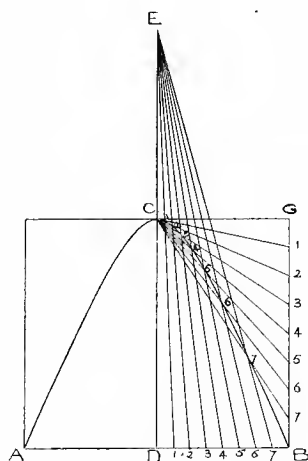


FIG. 34

Divide the radius *A B* into *three* equal parts for the three revolutions. With *B* as centre and *B A* as radius describe a circle, and divide it into any number of equal parts—say eight, by drawing four diameters. Each of the three divisions on *A B* is divided into eight equal parts. With centre *B* and the point of

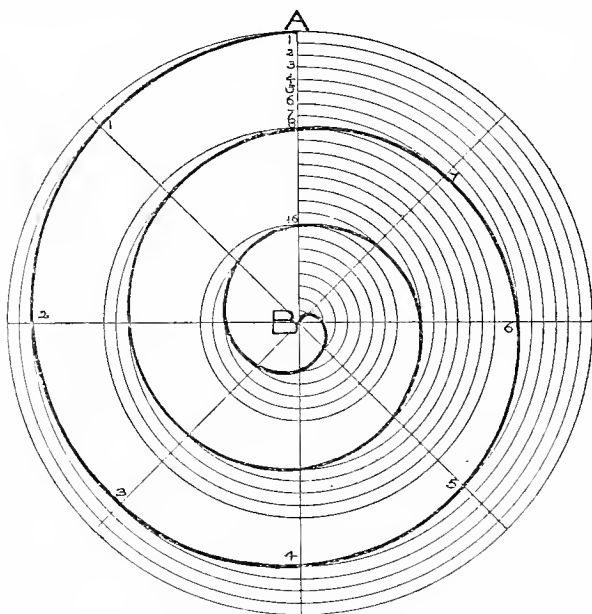


FIG. 35.—Archimedean Spiral.

each succeeding division as radius, describe arcs, meeting in following order the *next nearest* diameter as shown at arcs 1 1'', 2 2'', 3 3'', &c. Through point 8 with radius *B 8*, the second division, describe a circle, and through point 16 with centre *B* describe a circle. In these two divisions arcs are drawn as

described above for the division A 8, &c., to the next nearest diameter. The *spiral* is then drawn through the points thus formed on the diameters, which mark its path as at 1', 2', 3', &c., until it ends in its centre at B.

Fig. 36. To draw Goldman's Volute, the *cathetus* C F being given.

Divide C F into 15 equal parts. With C as centre describe a circle A E B to form the eye of the volute, making the diameter $3\frac{1}{3}$ of these parts. Bisect A C and C B in 1 and 4. On 1 4 draw a square, 1, 2, 3, 4. Produce the sides 1 2, 2 3, and 3 4 to G, H, and I respectively.

Divide 1 C into three equal parts. Draw lines parallel to 1 G through the points of division to P and L, which cut the line C 2 in the points 6 and 10. Through these points (6 and 10) draw lines to M and Q parallel to E H, cutting C 3 in 7 and 11. In the same way draw lines parallel to 3 I from 7 and 11 to N and R. The points 1, 2, 3, 4, 5, &c., will then form the centres of the series of quadrants which are to form the *outer spiral* that begins with the radius 1 F. To describe the *inner spiral*. A' F' in Fig. 36 (a) is equal to A F (Fig. 36). F' S' is made equal to the breadth of the fillet at the top F S. V' F' is drawn at right angles to F' A' and equal to C 1. By joining V' A' and drawing T' S' parallel to V' F', then T' S' is obtained which will be the length of *half* the side of the square for drawing the inner spiral. The method for obtaining the *inner spiral* is the same as for the *outer*.

Fig. 37. There is no geometric means of drawing a perfect catenary curve; at best we can only obtain

it by an approximation in geometry. The curve is formed by suspending a chain from two points and pricking points along the curve of the chain. These

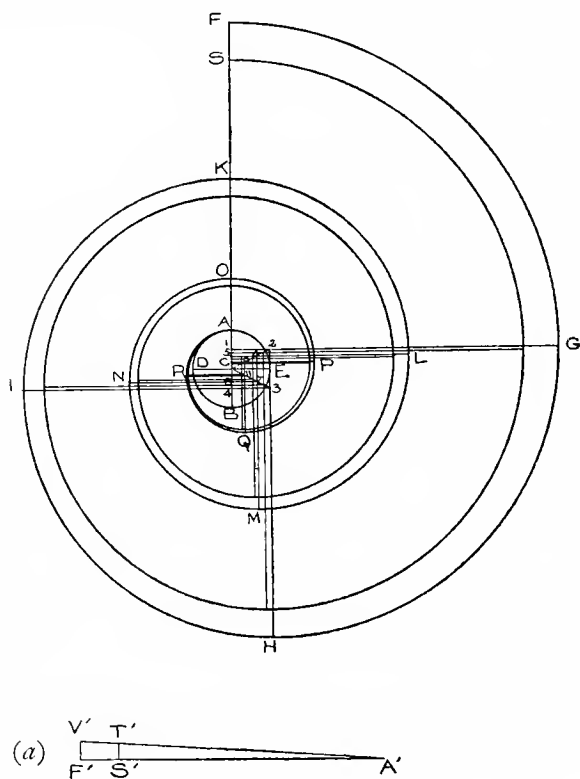


FIG. 36.—Goldman's volute.

points will mark the path of the catenary. In the accompanying figure three catenary curves are drawn from a chain suspended from points A and B.

Fig. 38.—To draw a cycloid curve when the *generat-*

ing circle is given. In order to find the length of the line A B on which the circle rolls, and which must be the length of the circumference of the given circle, we must first find *approximately* that length by

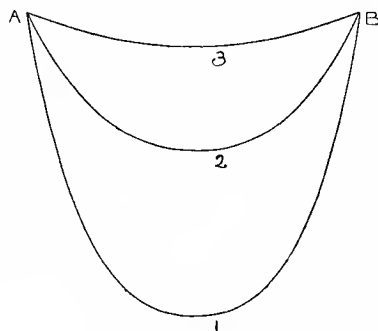


FIG. 37.—Catenary curves.

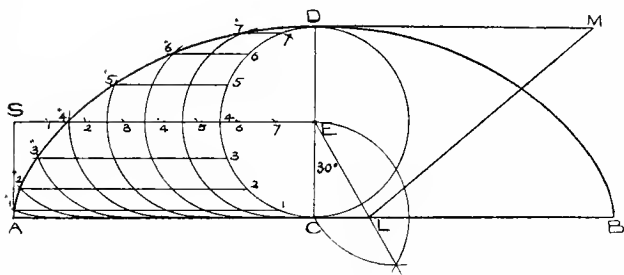


FIG. 38.—Cycloid curve.

the following method. Draw the vertical diameter of the circle D C. Draw D M at right angles to D C, and make it *three* times the length of the radius of the circle; make an angle of 30° at E, and draw a line

parallel to D M of any convenient length. The line E L making the angle of 30° cuts C B in L. Join M L. M L is the approximate length of half the circumference. Make A C and C B each equal to M L. Then A B is the length *approximately* of the circumference, drawn at right angles to C D on which the circle rolls. Divide now half the circle into eight equal parts, and draw a line from E S parallel to A B, and equal to M L. Divide E S into eight equal parts. From the points 1, 2, 3, &c., draw lines parallel to A C. With centres 1', 2', 3', &c., and with radius E C, describe arcs cutting them at 1'', 2'', 3'', &c. The curve A D, which must be drawn by free-hand, will then pass through these points. Complete the cycloid by drawing D B in a similar manner. The length A B can also be found approximately by dividing C D into seven equal parts, and taking $A B = 22$ of those parts.

GLOSSARY OF TERMS USED IN ORNAMENT

Many of the terms which appear in this Glossary have been explained in the previous chapters. The reader should refer back to the text when any of the terms are inadequately described here.

Æsthetics, the science of the beautiful,

Æsthetic, when applied to ornament, not only means "beautiful," but that beauty was the sole aim of its production, and distinguishes it from symbolic and mnemonic ornament. See page 143.

Allegory, the representation of one thing under the image of another. It was mostly confined to human figures, but to aid its comprehension attributes were added. Among the Pagans strength was shown as Hercules with his club; health as a woman with a serpent; rivers were represented as gods with crowns of sedge or rushes; towns as gods or goddesses with mural crowns. Among the Christians, a man holding a lamb, or a shepherd with his flock, was an allegorical representation of Christ the Good Shepherd; the seven cardinal virtues and the seven deadly sins were represented by allegorical figures, and each had its proper attributes.

Alternation, two different forms in succession, or alternating with each other. Figs. 67, 75, and 76.

Anthemion, a radiating ornament with a palmate outline; the honeysuckle ornament of the Greeks.

Attributes, the things assigned to any one. Amongst the Pagans the eagle and thunderbolt to Jupiter, the trident to Neptune, the peacock to Juno, &c. Amongst the Christians the nimbus was the attribute of divinity, saintship, or martyrdom, the lily of chastity, &c.

Balance, equilibrium or counterpoise. In compositions that are not symmetrical the *weight* of the masses must be alike on either side of

a central axis ; in those of symmetrical outline with different fillings there must be equality of weight in the fillings. Renaissance ornament affords many admirable examples of balance. See page 46, and Figs. 126 and 131.

Banding, decorating by means of horizontal stripes, mostly filled with ornament. Figs. 116 and 117.

Catenary, the curve formed by a chain hanging from two points. Fig. 27.

Cauliculus, the shoot or stem of a plant forming the volutes under the angles of the abacus, and those in the centre of each face of a Corinthian capital ; in modern works this name is mostly confined to the central spirals, the outer ones being called volutes. Figs. 180, 181, 185, 187, and 188.

Checkering, covering a surface with a square pattern like a chess-board, in which the colour or the ornament alternates. The outline is formed by equidistant vertical and horizontal lines crossing one another. Figs. 98 and 99.

Colour, apart from the literal meaning of the word, is a vague technical term to express character and contrast in ornament.

Complexity, interweaving or intricacy ; the opposite of simplicity. Ornament in which the leading forms are not apparent, is mainly to be found in Celtic, Saracenic, Moresque, and Gothic ornament. It is also characteristic of the decadent periods of all historic styles.

Contrast, the opposition of dissimilar figures or positions, by which one contributes to the effect of the other ; *e. g.* the straight line with the circle, vertical and horizontal lines alternating ; in colour black with white, &c. ; ornamental forms where flat and sharp curves contrast with one another ; a plain space alternating with an ornamented one, or an enriched moulding round a plain panel, or *vice versâ*, &c. See page 43.

Conventional. This is a word of great elasticity. In early decoration natural objects were highly conventionalized through the want of skill in the artists, who could not copy, but only portray their impressions, thus the Egyptians and early Greeks represented water by the zig-zag. These early conventionalized forms were sometimes perpetuated through religious conservatism, after the artists had become skilful. All ornament is more or less conventional, but the term is usually applied to designate that ornament in which the most beautiful and characteristic floral forms have been abstracted and adapted to the material employed and the effect wanted. The styles most characterized by conventional ornament are the Greek and the early Gothic ; they are equally effective as ornament in their respective countries, but the Greek has all the grace and vigour of the highest plant form, while Gothic has mostly only the vigour.

Figs. 49—54. The Romans and the Renaissance architects also successfully conventionalized. Figs. 91 and 129. Convention now too often means leaving out all grace and vigour. Saracenic-Persian ornament is perhaps the least conventionalized of fairly good ornament. Figs. 49, 53, 54, 118, and 119. *Conventional* is also used in opposition to *realistic* ornament.

Counterchange, a pattern in which the ornament and ground are mostly similar in shape but different in colour and alternate with each other. See Figs. 171 and 172.

Cymatium, the capping to a vertical member, as the cymatium of the abacus of the Roman Doric, of the architrave, of the frieze, of the corona. See Appendix on the orders.

Diaper, derived from jasper, originally employed to designate those coloured patterns on stuffs that suggested the flowerings of jasper; subsequently a pattern enclosed in repeating geometrical forms not composed of straight lines; but unhappily employed of late years to designate any repeating patterns enclosed in geometric forms, including checkers and net-work. Figs. 101, 107, 109, and 110.

Emblem, in Latin, means embossed ornament on vessels, inlaid work, and mosaic. In modern English it is a device, and was the animal or thing that was painted on a shield to show the temper or striking quality or achievement of the warrior. It is also used as an allegorical representation of some virtue or quality. We say the cock is an emblem of watchfulness; the lion, of courage; the scales, of justice; the lily, of purity; but the latter may be used as a symbol of the Virgin Mary.

Equilibrium. See *Balance*. Also Figs. 130 and 160.

Enlargement of Subject, e. g. the figure of Bacchus is wanted for a given space which it does not fill; the due filling of the space may sometimes be attained by the addition of his attributes, as a leopard, a thyrsus, a vine and grapes; accessories even may be wanted, as a satyr, mænad, rocks, trees, &c.

Eurythmy, harmony or elegance in ornament; a quality obtained by the use of contrasted but harmonious and dignified forms, expressed in a measured or proportionate quantity.

Even distribution, the plain space and ornament proportionately arranged; Indian ornament gives the most mechanical instance of this, while good Roman and Cinque Cento pilaster panels give the most artistic examples of this arrangement. It is sometimes improperly used to designate the balancing of masses in a design. Figs. 101, 102, 143, &c.

Expression, the method of representing ornament by various means, as in outline by the pencil, pen, or point; in painting, by the brush;

- and in relief or sunk work by modelling. In another sense *expression* is giving the proper treatment and character to ornament.
- Fanciful*, a term sometimes applied to grotesque creations, for example, to the hybrid animals, and the figures ending in foliage, met with in Pompeian and other decorations. Figs. 122, 131, 134, and 135.
- Fitness*, absolute propriety; beautiful ornament adapted to its purpose and not interfering with the use of the object ornamented. See page 48.
- Flexibility*, a quality derived from the appearance of plants of free growth; the freedom and elasticity found in natural forms when converted into ornament give a look of flexibility, in opposition to rigid and angular lines which produce a look of *inflexibility*. See Fig. 54.
- Fluted*, channelled in hollows, semi-circular, segmental, or elliptical in section; like those on some of the shafts of Greek and Roman columns. See also Figs. 75 and 76.
- Geometric*, or "geometrical arrangement," the setting out of all good ornament; also the bounding lines for ornament constructed on a basis of geometry, as in diapers, &c.; the triangle, square, lozenge, diamond, the circle, the hexagon, octagon, and other polygons, are the chief geometrical forms for patterns in ornament. Saracenic decorations are pre-eminently geometric in construction. See Figs. 101, 102, 106, 107, 110, and 172.
- Grotesque*, from the word grot or grotto. When the fantastic arabesques of ancient Roman decoration were discovered under the baths and in grottoes, they were originally called grotesque, and were imitated in the Vatican. (See Figs. 122 and 128.) The word is mainly used now to describe the coarse and humorous carvings of heads, satyrs, &c., originally used to decorate the built grottoes of the late Renaissance, which gradually overspread all buildings. The word is also used to denote the quaint class of Gothic sculptured creations (Fig. 131), such as winged dragons, grinning monsters, &c., that serve to decorate the ends of dripstone mouldings; gargoyles, bosses, and finials, &c.
- Growth* is a concise expression for those forms which denote the special vigour shown by plants at certain epochs of their growth, the twist of the stem of creeping plants to get light to the flowers, the bursting of the bud from a capsule, or the clasp of a tendril. Examples are to be met with in the volutes of Greek Corinthian capitals, in the base of the tripod on the choragic monument of Lysikrates, in Renaissance sculpture, and in early Gothic.
- Guilloche*, snare-work; an ornament composed of parallel curved lines flowing and crossing each other; these forms may best be illustrated

- by the bending of ropes round circular pins so as to cross one another. See Figs. 37, 38, 39, and 40.
- Hieroglyphic*, sacred carving, mostly applied to Egyptian picture and symbolic writing. See Fig. 162.
- Idealistic* used by some writers as equivalent to conventional, in opposition to "realistic."
- Imbrication*, overlapping scale-like ornaments; as seen in fir-cones, the hop, and curved tiles on roofs, are examples of imbrication. The bark of the Chili pine is a peculiar instance of horizontal imbrication which is something like that of a Roman roof. It is used as decoration on roofs, torus mouldings, and small columns, and is a common way of filling certain spaces on Italian majolica. See Fig. 26, A, B, C.
- Inappropriate ornament*, that which is improperly applied, so as to spoil the appearance, or interfere with the use of an object; is false, out of scale, or redundant. See page 21.
- Independent ornaments*. Things that are beautiful, quaint, or curious, that may be attached to a wall or surface, as festoons, shields, medallions, trophies, &c. See page 21, also Fig. 133.
- Interchange* is when running vertical or horizontal patterns are divided by a vertical or horizontal axis, the colour of the ground on either side of it being different, the ornament on each side of the axis being of the colour of the opposite ground. See Figs. 173, 174.
- Interlacing*, ornament composed of bands, ribbons, ropes, rushes, osiers, &c., woven together, or crossing at intervals, as seen in Celtic, Byzantine, and Saracenic ornament; among examples of interlaced work may be mentioned braided, trellis, basket, and woven work. Figs. 22, 23.
- Intersection*, the points at which lines or other forms cut one another.
- Monotony*, sameness of tone; often shown in excessive repetition; a very undesirable feature in ornament: patterns within diapers without contrasting elements; mouldings coming together whose widths and profiles are nearly equal; panelling without sufficient variety in size; carved ornament of nearly equal relief—in short, any lack of variety in the composition, modelling, or colour of ornament produces monotony.
- Mnemonic*, ornament in which written signs or other elements are used for the purpose of aiding the memory. See page 130. Figs. 162, 163.
- Naturalistic*, those forms that are used for decoration, that resemble the spots and eyes on butterflies' wings, or the markings on the skins of reptiles and quadrupeds, or on the feathers of birds; mostly found in the ornament of savage tribes.

- Network*, as opposed to checkers, are squares set lozengewise or forming diamonds; but the word is commonly applied to any figures in outline, rectilinear or otherwise, covering a surface. See Fig. 102.
- Order*, regular disposition; a pleasing sequence in the arrangement of opposed forms. Order is of such vital importance in a design that ornament can scarcely have any existence without it.
- Powdering*, sprays, flowers, leaves, and other decorative units sprinkled on a ground; "powdering" is a favourite method of decoration with the Japanese, and was with the Mediævals. See pp. 63, 80, and 83, and Figs. 85, 103, and 105.
- Proportion*, the harmonic spacing of lines and surfaces; of the length, width, and projection of solids; the ratio between succeeding units in flowing ornament, and the relation between the spaces occupied by the ornament and its ground.
- Radiation*, the divergence from a point of straight or curved lines. Radiating ornament is improved by the point being below the straight or curved line from which the radiation starts. Explained at page 44. See Figs. 49, 50, and 51.
- Realistic*, a style of decoration in which forms are applied without alteration from natural forms or objects, or without apparent alteration; it is opposed to the "conventional," and is rarely found in the best periods of good historic styles. See Figs. 1 and 146.
- Repetition*, a succession of the same decorative unit. For explanation see pages 40—43, and Figs. 3, 9, and 32.
- Reeded*, convex forms applied to a flat or curved surface, producing the reverse effect of "fluting"; some of the columns in Egyptian architecture are reeded, being sculptured to represent a bundle of reeds tied together. See Figs. 76A and 76B.
- Repose*, rest; the absence of apparent movement in ornament; this apparent movement may be seen in some flamboyant tracery and Saracenic work, and in some bad paper-hangings, &c.; also the absence of spottiness. See page 45.
- Scale*, the relative proportion of the different parts of a decorative composition to each other, to the whole, and to the thing ornamented. If a design is composed of different organic forms, they should, as a rule, keep their natural proportion to each other. Attributes are, however, often made to a much larger scale in Greek coins and engraved gems. Equality in scale need not be used when parts are cut off from each other by inclosing mouldings, as in isolated panels, pilasters, medallions, spandrels, &c.; the inclosed spaces may be filled with other subjects of smaller or larger scale, as with landscapes, heads, or inscriptions; the frieze of a room, from its greater importance, may have its decoration larger in scale than the panels

of the door or shutters. The scale employed in the decoration of rooms, of floors, or of pieces of furniture, may increase or destroy their importance; hence, except in rare instances, the human figure should not exceed its natural size, and may want to be much smaller. And this precaution is equally important in the use of plants; if the flowers or leaves in ornament are made gigantic, they destroy the scale of the room or floor; though it may be known that leaves four feet in diameter or six feet long actually exist.

Scalloping or *scolloping*, forming an edge with semi-circles or segments, the convex side being outwards.

Scroll, a roll of paper or parchment. As a unit in ornament, it is usually applied to two spirals, each attached to the opposite ends of a curved stem, each spiral coiling the reverse way, but the word is often applied to ornament composed of a meander with spirals.

Series, usually the sequence of several dissimilar forms at regular intervals, as the bead and reel in bead-mouldings, the sequence of the same text in Saracenic work, and also a sequence of forms similar in shape but in an increasing or decreasing order, as branches of plants with leaves getting smaller from bottom to top.

Setting out, the planning of a scheme of decoration; the first constructive lines or marking-out of the ornament; the skeleton lines of a design. See pages 26, 40, and 68.

Soffit, an architectural term applied to the under side of any fixed portion, as the soffit of a beam, an architrave, a cornice, an arch, or a vault.

Spacing, the marking of widths in mouldings, panels, stiles and rails, borders, &c. Equality of division in decoration is, in most cases, ineffective, and should be guarded against; harmonious variety in such widths and distances is desirable for getting a good effect. See pages 42, 62, 65, and 68—71. Also Figs. C, D, 88 and 89.

Spiral, the elevation of a wire continuously twisted round a cylinder, or cone, also the plan of one twisted round a cone; in ornament the word spiral, when used as a substantive, mostly means the latter form. The curved line forming a volute (as in the Ionic capital) and the outline of the wave ornament; the line of construction in univalve shells. See Figs. 24, 41, 42, 43, 178, &c.

Stability, firmness and strength in the general appearance of a design; in climbing plants this appearance can only be given by their attachment to a central upright or to the vertical sides of the frame; the straight line is the chief factor of stability in ornament. See page 42. Where many curved lines are used in the decoration of long panels, straight-lined forms must be introduced to counteract the effect of instability in the curved ones. See Figs. 123 and 128.

This is especially the case in pilasters which are architectural features of support ; and for the same reason the heavier forms should be kept at the bottom and the lighter ones at the top.

Style originally meant handwriting. In historic styles it means the expression of the taste and skill of the people who produced the work of art, whether it be architecture, sculpture, or painting. Bygone styles are useful for study, and may be copied or paraphrased, but can never be re-created, because the genius, knowledge, opportunities, and surroundings of any later period are unlikely to be the same. We classify them under the head of conventional (sometimes called idealistic), realistic, and naturalistic. It is also used to express good drawing or modelling, which conveys the elegance, grace, or vigour of the best natural forms. Sometimes it is applied to a composition in which those qualities are expressed, in contradistinction to the ill-drawn, flabby, or commonplace.

Spotting. This word has nearly the same meaning as "powdering," the only difference being that the units of form in such decoration have a geometrical basis and are mostly equidistant, the ground occupying much larger space than the ornament. See Fig. 80.

Stripe, usually applied in ornament to narrow bands.

Suitability, æsthetic and practical fitness ; the great thing to remember is the nature, surface, and shape of the object to be decorated, and to design the ornament accordingly, for it is evident that what would be a good ornament for one object or position might be bad for another.

Superimposed or *superposed*, an ornament which is laid on the surface of another, such as a large flowing pattern on a ground covered with a smaller pattern, either geometric or floral ; or a broad, ribbon-like ornament laid on a pattern formed of narrow and fine lines. This sort of ornamentation is mostly seen in the decoration of the Saracens, but occasionally in that of the Renaissance artists. In the wall-patterns of the Alhambra, we often find two, three, and sometimes four different designs superimposed on each other, the judicious use of different colours and gold preventing confusion in the pattern ; the complexity is sometimes of a well-ordered kind. See Figs. 101, 102, and 104.

Subordination. A regular gradation from the most important feature to the least important. See the central panel of ceiling, Fig. 89.

Symbol originally meant a token or a ticket among the Greeks ; by the Romans it meant the same, and also a signet. In modern English it means a sign, emblem, or figurative representation. In ornamental art it is mostly used to express some beautiful thing that by knowledge or association brings to the mind some power or

dignity connected with religion. Attributes are often used as symbols of the divinity to which they belong—the bow of Diana, the thyrsus of Bacchus (Fig. 167), and the trident of Neptune, &c. In Christian ornament the fish and lamb are mostly symbols of the Saviour. It is sometimes difficult to determine when anything should be called a symbol, an emblem, or an allegorical representation; for instance, whether the Apocalyptic calf is a symbol, an emblem, or an allegorical representation of St. Luke.

Symmetry, equality of form and mass on either side of a central line; absolute sameness in the two sides of a piece of ornament. See Figs. 127 and 130.

Tangential Junction, the meeting of curves at their tangential points, so that they flow into one another without making an angle. The principal constructive lines in foliated ornament and scroll patterns should illustrate “tangential junction,” *i. e.* the branches and curves should flow out of the central stem. See p. 45, and Figs. 25 and 53.

Uniformity, being of one shape; the square and circle are uniform figures; it is one of the main causes of grandeur and dignity, but if absolute, results in monotony. The Greek temples had apparently uniform columns placed at uniform distances, and monotony was avoided by delicate variations in the size and spacing of the columns.

Unit, the smallest or simplest *complete* expression of ornament in any scheme of decoration.

Unity, perfect accord in all the parts of a design. Unity is often a characteristic of designs that are very monotonous, so by itself it will scarcely render a design pleasing.

Unsymmetrical, without symmetry, such as the volute. See the word *Balance*.

Variety, the absence of similarity; a word embracing an infinity of differences, from two things that are not absolutely alike, to two things that are absolutely unlike. The judicious use of variety gives interest to ornament, but uniformity with slight variety gives the most dignity.

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